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A Discussion
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ULCERATIVE COLITIS.

Opening Paper at a Meeting of the Proctological Subsection of the Royal Society of Medicine on May 9th

BY SIR HUMPHRY ROLLESTON, K.C.B., M.D. CAMB., D.C.L., LL.D.,
PRESIDENT OF THE ROYAL COLLEGE OF PHYSICIANS OF LONDON; EMERITUS PHYSICIAN, ST. GEORGE'S HOSPITAL, LONDON.

THE subject of chronic ulcerative colitis, though mentioned in Wilks and Moxon's "Lectures on Pathological Anatomy" in 1875, owes its recognition in great measure to the writings of Sir William Hale-White, the President of this Society, who gave the first of his several descriptions of the condition in 1888. There was a discussion at the Section of Medicine of the Royal Society of Medicine in 1909, with statistics of 312 cases so diagnosed in the hospitals with teaching schools in London. In 1911 simultaneous discussions on colitis were held at the Harveian Society and at the Chelsea Clinical Society. It is a disease on which British physicians have made the great bulk of the contributions. The question naturally arises whether, in the years since these discussions, any important advance in our knowledge has been made. From the bacteriological and medical points of view it must be admitted that there is little to say. From the diagnostic standpoint the increasing appeal to the sigmoidoscope is important, and as regards treatment, the increasing stress laid on the value of appendicostomy is the most noticeable feature.

SCOPE OF THE TERM.

In introducing a discussion it is important to define its scope, and in this instance it is somewhat difficult to limit the field. By a process of exclusion, some idea may be arrived at; it will be agreed that many forms of ulceration of the colon may be eliminated as not coming within the meaning of ulcerative colitis. Thus exogenous ulceration due to an abscess rupturing into the bowel—e.g., an appendix abscess, malignant ulceration, stercoral ulceration, diverticulitis, typhoid and paratyphoid, "uræmic," and tuberculous ulceration, bacillary and amœbic dysentery—may be counted out. Ulceration due to acute colitis of known toxic origin, such as that due to corrosive sublimate poisoning, and the various forms of parasitic colitis and of infective proctitis of local origin and extent should not be included in ulcerative colitis. The ulceration exceptionally found in pneumonia and after accidents (those causing paraplegia having suggested a trophic disturbance) should also be excluded. A few words should be added about what was formerly known in this country as the ulcerative colitis of asylums and in America as institutional dysentery. Early in this century Vedder and Duval (1902) in America, and in this country Mott and Durham (1901) and Eyre (1904), showed that it was bacillary dysentery, thus confirming Gemmel's view (1898). Sir Frederick Mott has most kindly provided me with information as to the present position of knowledge of this disease in the London County Council Asylums; since the term "colitis" and the idea that it was a non-infectious disease due to trophic changes have been given up, the type of disease has altered so that severe and acute cases are less frequent. Outbreaks are almost certainly due to the presence of chronic carriers, and his assistant, Captain A. S. Mann, who has done much serological work on the subject, finds that the responsible organism is type X of the Oxford series of Flexner dysentery organisms. It appears advisable to exclude from the group of cases that may for convenience be called ulcerative colitis, the cases often arising in epidemic form in asylums, and to confine our attention to the sporadic cases seen in the ordinary civil practice which are not, from a laboratory point of investigation, bacillary dysentery.

Bacteriologically ulcerative colitis is not a specific disease, for numerous organisms, *B. coli*, coliform organisms, *B. pyocyaneus*, pneumococci, and streptococci may appear to be the predominating and causal agents. A bacteriological diagnosis is comparatively easy in the acute stage, difficult when the condition has become chronic. The opportunities for secondary infection in the colon are most favourable, and it is probable that ulceration of the colon, originally due to one micro-organism, may be kept up by the combined attack of different bacteria, or to successive varieties or strains of pyogenic cocci. Lockhart-Mummery in 1911 drew attention to the gravity of cases of ulcerative colitis following tropical dysentery in which the original infection has died out. It is indeed difficult to be certain that the original infection has entirely disappeared; for although the stools may not give any evidence of amœbic or bacillary dysentery, the organism may still be present in the walls of the colon. Dr. J. W. McNee has shown me a specimen of the colon with *Entamœba histolytica* in the blood-vessels from a man who had never been out of England and presented the symptoms of ulcerative colitis with absence of *E. histolytica* from the stools. It is not surprising that in such cases specific treatment, for example, emetine for latent amœbiasis, may fail to be curative, just as iodides may prove disappointing in an actinomycotic lesion with secondary streptococcic invasion. Further, ulceration of the colon is often a stage in an acute or chronic inflammation of the bowel, and not, as far as is known, a process due to the advent of a special micro-organism. The acute phase, as in hæmorrhagic colitis, may pass off or prove fatal before ulceration is established (vide Grant). It must indeed be admitted that ulcerative colitis is not a disease in the strict sense of the word, any more than rhinitis or bronchitis is, but that it is a syndrome with fairly constant clinical manifestations and anatomical changes, which may be excited by different factors.

ÆTIOLOGY.

As the causes favouring infection of the colon, and widespread ulceration are obscure, reference may be made to McCarrison's and Findlay's observations showing that a devitamised diet renders animals less resistant to infection; thus, McCarrison found that healthy monkeys, carriers of *Entamœba histolytica*, may, as the result of a deficient diet, develop amœbic dysentery, and in an infected area organisms of the hog cholera group attack pigeons on a devitamised diet and spare those properly fed. Diminution or deprivation of the water-soluble vitamin B, such as occurs in food consisting of excess of starch and fats, favours infection. The whole alimentary tract of the experimental animals shows atrophy and necrosis; and acute colitis but not ulcerative colitis was described. It is, however, easy to understand that in man a diet deficient in protein and water-soluble vitamin B might so reduce the healthy resistance of the mucous membrane of the colon that micro-organisms previously harmless, such as *B. coli*, would become pathogenic; in short, the carrier would become a patient. It is also conceivable that changes in the mucous membrane of the colon may so alter their environment that bacteria unable to multiply in ordinary conditions would grow without inhibition, in other words, that the intestinal flora would change. Bassler speaks of a coliform organism of enhanced virulence as the *B. pseudodysentericus coli*. Nearly 30 years ago the late Leopold Hudson suggested that swine fever and ulcerative colitis might be identical, and quoted a few instances in which the disease had followed the consumption of pork. He pointed out similarities between the morbid lesions and the clinical manifestations in the two diseases. Prof. F. Hobday tells me that no definite proof has as yet been brought forward in support of any connexion between these human and swine diseases.

COMPLICATIONS.

Is the incidence of perforation lower now than it was formerly in this country? Among 16 cases selected from those recorded in the *Transactions* of the Pathological Society of London (1885–1907) it occurred in five, and out of 33 fatal cases (probably including the above) collected in 1910 by Lockhart-Mummery, 9 showed perforation and general peritonitis; possibly some of the cases were published on this account; or has the type of the disease changed either from alteration in treatment or from less obvious causes? Among 22 selected cases of ulcerative colitis examined after death at St. George's Hospital between 1890 and 1922, Miss N. Schuster found four cases of perforation, two being in the "nineties" and two during the war; so far as this small group goes there does not appear to be any special alteration in the incidence of perforation. In very rare instances perforation is found after death with but little evidence of peritoneal response, and it is probable that the perforation was an agonal phenomenon when the reactive powers of the body were reduced to a minimum. In exceptional instances multiple perforations have been found. At the Mayo Clinic among 117 cases of chronic ulcerative colitis, which appear to have mainly followed dysentery, perforation was not uncommon and was a cause of localised abscess and not necessarily of general peritonitis. Hurst, on the other hand, found that localised abscess is exceptional and general peritonitis very rare, and that the latter when present is due to direct spread of infection through the walls of the colon and not to perforation. He states that stricture from cicatrisation of the healing ulcers never occurs, and other experience in this country supports this conclusion; among the 16 selected cases from the Pathological Society there was one only in which any mention of narrowing is made; in that case the descending colon was described as much contracted and thickened; no stricture was found among the 22 cases analysed by Miss Schuster: Logan, however, definitely states that stricture is likely to occur. Possibly the nature of the Mayo Clinic cases are not exactly the same as those in this country. Arthritis, well recognised in bacillary dysentery, occurs in a small percentage of cases of ulcerative colitis. Among Yeoman's 65 cases arthritis or joint pains were noted in 4. Peripheral neuritis has also been noted. Ulceration in the small intestine is most exceptional.

CLINICAL FEATURES.

The sexes are equally affected, and the incidence falls chiefly on young adults and in early middle life; among Logan's 117 chronic cases 65 were under 30 years of age, and only 8 over 50. The onset may be sudden or insidious, and the course of the illness also acute or chronic. Acute colitis due to one micro-organism, such as the pneumococcus or streptococcus, or dysentery bacillus, may be succeeded by a chronic infection by a different bacterium. The first symptoms are usually those of colonic irritation—frequent stools, sometimes preceded by constipation. In the acute cases the temperature is raised; in chronic cases it is normal or even subnormal, except for elevations corresponding to exacerbations. The leucocyte count appears to vary; in some instances there is a leucocytosis, in others it is absent. As would appear probable (Price-Jones), on the assumption that there is a coliform infection, a lymphocytic increase has been reported (Horder, quoted by Hurst); but the blood picture would naturally differ with exacerbations and intermissions in the chronic form. Anæmia with 50 or even 20 per cent. of hæmoglobin is partly due to loss of blood, partly to toxins absorbed from the colon. The number of stools varies from 3 to over 20 in the 24 hours, but sometimes there are periods of constipation. The number of evacuations are less than in tropical dysentery, and tenesmus, which depends on the presence of ulceration low down in the rectum, inconstant; it occurred in one-third of Logan's cases. The excreta contain blood, pus, mucus, and sometimes sloughs of the mucous membrane. Onset with hæmorrhage has been correlated with the commencement of ulceration low down in the colon (Hawkins). Abdominal discomfort is commoner than actual pain, the latter chiefly occurring before the bowels act or when there is much flatulence; local tenderness on deep pressure over the colon is variable. The importance of a sigmoidoscopic examination does not at the present day need emphasis; though it only provides information about part of the large intestine, that portion generally shows ulceration if it is present anywhere. The ulcers are indistinguishable from those of bacillary dysentery. Logan gives a number of skiagrams showing interference with the peristaltic waves which become lengthened, more superficial, with rounded instead of sharp edges, so that eventually the fibrosed colon appears as a thick-walled tube without haustrations, often with stenosis. Hurst describes mottling of the colon, which is often abnormally narrow from spasm. Appetite and digestion are fairly maintained, but loss of weight and weakness are induced by the diarrhœa and toxæmia. The mortality is high, about 50 per cent., and Lockhart-Mummery estimates that it reaches 78 per cent. when treated medically. The cases are prone to relapse. The chronic cases must be diagnosed from carcinoma, tuberculous and follicular ulceration of the colon, the sigmoidoscope being the obvious means of so doing.

TREATMENT.

Many methods of treatment have been employed.

Dietetic.—As the stomach and small intestine are practically always free from ulceration, and as digestion and absorption are fairly well carried on, it is unnecessary to restrict the diet to slops and soft food. As deficiency in the antiscorbutic vitamin C has been shown experimentally to reduce the resistance to infection (G. M. Findlay), and as McCarrison's observations suggest that lack of water-soluble vitamin B favours the incidence of inflammation of the alimentary canal, it would appear reasonable to arrange a diet containing a sufficiency of antiscorbutic food and a fair quantity of protein. Soured milk with living cultures of *B. bulgaricus* has naturally been given a trial, but Hurst did not find that it had any beneficial effect.

Drugs.—The large number of drugs employed is in itself a reproach to purely medical treatment. Intestinal antiseptics, such as salol, bismuth salicylate, β-naphthol, small doses of mercury or calomel, benzyl benzoate, gentian-violet, acriflavine, are on the whole disappointing. Pomegranate bark and simaruba have also been tried; and more recently of kaolin Logan remarks that it "was of no benefit whatever, although it is advised strongly by German writers." Finely pounded charcoal has been useful in reducing flatulence and obviating colic. Liquid paraffin by the mouth has been recommended as forming in the colon a coating in which bacteria cannot live (C. J. Macalister); and olive oil has been advocated both orally and by enemas (Logan). Lavage of the colon with antiseptics, such as boric acid, acetozone, argyrol, nitrate of silver, albargin (silver nucleinate), allantoin, emulsion of sulphur, has been much employed; but, as the whole of the colon cannot be thus satisfactorily cleaned, appendicostomy or cæcostomy has largely superseded rectal injections as an effective means of washing out the colon. Einhorn employs a "jointed intestinal tube" 15 to 20 ft. in length introduced by the mouth and carried, under the guidance of X rays, into the cæcum, where it is left in situ for days as a means of getting a result comparable to that of cæcostomy; this procedure is on its trial. The respective merits of appendicostomy and cæcostomy have been much discussed; when the appendix is obliterated or, for other reasons, cannot be found, a valvular cæcostomy can be made; but neither this procedure nor appendicostomy gives the colon the rest from the contact of fæces which an open cæcostomy or a colotomy does. In 1911 Sir D'Arcy Power took the cautious view that the improvement after appendicostomy was mainly due to the prevention of toxic absorption and keeping the bowel clean, and stated that the ulcerative

process continues until the patient becomes naturally or artificially (by means of vaccine) immune. Hurst considers that appendicostomy halves the time of illness that would be experienced under medical treatment, and surgical opinion is strongly in its favour. To give operation a fair chance it should be done before the patient is debilitated, and according to W. G. Spencer medical treatment should not be persisted in for more than three months. Short-circuiting the ileum into the pelvic colon has the serious drawback that the rectum is often affected; the radical means of providing physiological rest to the colon is a complete transverse ileostomy so as to exclude the colon; Stone recommends this in combination with a separate appendicostomy for irrigation of the colon.

Vaccines have been extensively employed; few reports are enthusiastic, and the difficulty of obtaining the causal organism is considerable, even with the help of serological reactions. An autogenous *B. coli* or coliform vaccine has usually been employed and should not be given during the acute acerbations of this chronic infection, as the condition may thus be seriously aggravated. In 1909 H. P. Hawkins advocated anti-dysenteric serum, especially in acute cases, but without giving any statistics as to its value. In 1921 Hurst recorded very striking results from the intravenous injection of multivalent antidysenteric serum in two patients who did not show dysenteric bacilli in their fæces. The healing of the ulcers as watched by the sigmoidoscope occurred in one of the cases in five days after the first injection of serum, and as the blood did not agglutinate any stock dysenteric organism, the question arises how far the curative action was due to the horse serum apart from its specific anti-dysenteric content.

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THE TREATMENT OF LIVER ABSCESS BY ASPIRATION,

WITH AN ACCOUNT OF FIFTEEN CASES.

BY PHILIP MANSON-BAHR, D.S.O., M.D. CAMB., F.R.C.P. LOND.,

GEORGE C. LOW, M.D. EDIN., M.R.C.P. LOND.,

PHYSICIANS, HOSPITAL FOR TROPICAL DISEASES, LONDON; LECTURERS, LONDON SCHOOL OF TROPICAL MEDICINE;

J. J. PRATT, F.R.C.S. ENG.,

COL., I.M.S. (RET.); SURGEON, HOSPITAL FOR TROPICAL DISEASES; LECTURER, LONDON SCHOOL OF TROPICAL MEDICINE;

AND

A. L. GREGG, M.D. DUB.,

SUPERINTENDENT, HOSPITAL FOR TROPICAL DISEASES.

AMŒBIC abscess of the liver still ranks as one of the most dreaded of tropical diseases; until recently the open operation, as a means of evacuating the liver pus, dangerous and difficult though it may often be, has been universally considered the correct surgical procedure. Apart from risks attending the operation, the open method is apt to entail other consequences, such as a secondary bacterial infection of the sterile abscess cavity through the wound itself or through the drainage-tube, with ultimate sinus production or other unpleasant sequelæ. Even in the most practised hands the death-rate from the open operation must still be a pretty high one, though it has considerably diminished since anti-amœbic treatment has come to be regarded as a most necessary adjunct to surgical measures. The steps which have led to the more ready diagnosis of hepatic abscess, and consequently to a better understanding of its treatment, have recently been adequately reviewed by Rogers (1922).

Mortality from Hepatic Abscess.

It is difficult to procure exact figures bearing upon the mortality from the open operation, as, naturally, the risk to life varies under varying circumstances. The conditions under which the operation takes place naturally influence the result. European patients, for instance, stand a much better chance of recovery when subjected to operation in England than when exposed to the debilitating effects of a tropical climate. Then, again, in comparing figures due allowance must be made for native cases, for in them the mortality rate must be higher—applying, as they so often do, for treatment only when in extremis—than in Europeans who usually seek medical advice directly symptoms manifest themselves.

According to Rogers, in the tables given in his "Bowel Diseases in the Tropics," the mortality in India and Mesopotamia from the open operation (native cases), even since the institution of anti-amœbic treatment, is still over 50 per cent. The death-rate, on the other hand, in a series of collected cases treated by the closed method—i.e., repeated aspiration—combined with medicinal treatment, is about 14·4 per cent. Other figures available read as follows: Tomes, in 1884, records a death-rate of 75 per cent. by the aspiration method and 31·6 per cent. by the open operation: in a large series of 300 cases, reported by Wildt in Cairo in 1904, the death-rate varied from 20–38 per cent.

Methods of Aspirating Liver Abscess.

The closed or aspiration method of evacuating liver pus is no new thing. As long ago as 1828 Annesley advised the evacuation of pointing hepatic abscesses by means of a trocar; in 1871 we find Maclean advocating the Bowditch syringe as a means of evacuating the fluid, but his outstanding contribution to this subject may be said to be his insistence upon the necessity of exhibiting large doses of ipecacuanha (20–25 gr. daily, or even more) in the treatment of the disease. His teaching had, however, been forgotten and has but recently been revived.

In 1879 Manson, in a private notebook, recorded a fatal case of hepatic abscess which he observed for over 60 days, and which he repeatedly tapped by means of a syringe, withdrawing over two pints of pus, but the cavity constantly refilled, so that he had to resort to continuous drainage. Failure in this case led him to devise (1883) the trocar and cannula which bears his name, and at this time we find him writing: "Not many years ago, to tell a patient he had abscess of the liver was nearly tantamount to telling him he was about to die. . . . But since the introduction of the aspirator, of the drainage-tube, and of Listerism, the prospects in this disease have enormously improved: at all events we need no longer stand by the patient with folded arms." He did not, however, realise at this time the necessity of exhibiting ipecacuanha at the same time as the operation. Others followed Manson's example, but eventually the practice seems to have fallen into disuse, possibly through lack of appreciation of Maclean's teaching.

Continuous aspiration or "tapping" was practised at this time by Veale (1882–3), and by Jessett (1885); the latter quotes one case which recovered afte

16 tappings in which a total of 400 oz. of pus was abstracted. In 1902 Rogers advocated repeated aspiration of hepatic abscess and injection of quinine in solution as an amœbicidal agent, but was not at that time able to put his theories into practice; in 1906, together with Wilson, he recorded two successful cases treated by this method. In 1911 we find a more general adoption of aspiration in Calcutta, where 23 cases were recorded with four deaths, but we gather that re-accumulation of pus was also experienced, for nine cases had subsequently to submit to the major operation. Thurston, in 1914, critically analysed a series of 101 cases of liver abscess, and concluded that the routine exhibition of ipecacuanha or emetine in addition to aspiration reduced the death-rate from this disease considerably. Newman, writing at the same time, once more urged the importance of the open operation and free drainage, as being based upon sound surgical principles; aspiration, he insisted, was of use only in quiescent abscesses. Talbot, in 1919, recorded successful aspiration of 11 cases with no deaths in Mesopotamia during the war. The pus was drawn off by means of a 20 c.cm. syringe through the chest wall, but the importance of a thorough course of anti-amœbic treatment as a complementary measure seems hardly to have been appreciated. Isolated cases treated by aspiration and emetine have been recorded in the literature by Rouget, Chauffard, Valence, and others.

Description of the Authors' Series of Cases.

In this paper we wish to describe a series of consecutive cases treated successfully in the last three years, during which period no other method of treating hepatic abscess has been adopted. Many of the cases were acutely ill on admission, yet there have been no deaths nor even supervention of any untoward symptoms following this simple operation. Moreover, we are satisfied that the method of aspiration, combined with medicinal treatment, adopted by us, presents many obvious advantages over the open exploratory method, which ranks certainly as a major operation.

Operation Technique.

1. An ordinary Potain's aspirator is sufficient. The needle should not be inserted to a depth exceeding 3¾ inches.

2. A reserve set of tubing and junctures in case of plugging with thick pus or blood-clot during operation is necessary.

3. When pus is struck by exploratory puncture, complete evacuation of the abscess cavity should at once be carried out as part of the same operative procedure.

4. Should the pus prove too thick for aspiration (Case 8), Manson's trocar and cannula can be inserted along the track of the aspiration needle, and a free evacuation of the abscess cavity thereby obtained.

5. *Site.*—No definite instructions can be laid down about the site of puncture; the site of election should be the point of greatest tenderness and swelling, should such exist. In the absence of any localising signs the routine procedure adopted by us has been (1) eighth interspace in anterior or mid-axillary line, (2) the epigastric route.

6. Without a general anæsthetic not more than three punctures at one time are advocated, but under general anæsthesia success has attended the search for pus after as many as six punctures.

7. Contrary to the usually accepted teaching, there appears to be no particular advantage in partial aspiration; in other words, as much pus as possible should be evacuated at one aspiration.

8. No special advantage seems to accrue from the injection of emetine or other amœbicidal substances into the abscess cavity. Healing appears to take place without them.

9. The effusion of serum into the abscess cavity probably normally takes places and should be regarded as the natural method of repair. This must be considered as being quite a distinct process from a re-accumulation of pus (vide Case 2).

10. The risk of hæmorrhage after multiple punctures, although theoretically great, in practice appears to be of small import. Whenever possible, puncture of lung tissue should be avoided as increasing the risk of hæmorrhage.

The Choice of Anæsthetic.

1. In the great majority of cases general anæsthesia is to be preferred to local. When, however, definite localising signs are present and the position of the abscess is certain, or almost certain, or when the physical condition of the patient is such as to contra-indicate the use of a general anæsthetic, then local anæsthesia can be resorted to, a 2 per cent. solution of novocaine with adrenalin being employed, and the skin and muscles (including the diaphragm, if necessary) must be infiltrated in the line of the puncture, but once the exploring needle has passed into the liver all risk of pain is over. *The passage of a stout needle through the liver substance is absolutely painless;* this was demonstrated in Case 3 when the abdomen was opened under local anæsthesia. But should this possibility not be suspected we have come to regard, as the result of our experience, a complaint of intense pain experienced by the patient during exploration under a local anæsthetic as not being suggestive of liver abscess, but as rather indicating the passage of the needle through some solid tumour, and in the latter contingency (malignant disease) we have noted that the small amount of blood withdrawn is also suggestive.

2. When, as the result of unsuccessful puncture, the possibility is suggested of the case proving to be one of malignant disease simulating abscess, then an exploratory laparotomy under general anæsthesia should be undertaken. *Local* anæsthesia possesses the advantage that, should the pus prove viscid and difficult of aspiration, continuous suction may be maintained for hours, if necessary, without causing any further discomfort or risk, such as would occur if prolonged general anæsthesia had to be kept up (see Case 3).

Details of Cases, with Remarks.

CASE 1.—B., 32, admitted on Jan. 17th, 1920, discharged Feb. 17th, 1920. Had amœbic dysentery in November, 1918; since then suffered from recurrent attacks of fever, pain in the right shoulder, persistent "dragging" epigastric pain, and, latterly, intermittent attacks of diarrhœa. On admission the temperature varied, sometimes up to 103° F.: the right hypochondrium was rigid, tender on pressure, and the liver definitely enlarged. Over the lower border of the liver the skin was raised and tense; the spleen just palpable. No *E. histolytica* cysts found. Hæmoglobin index 70 per cent.; red cells 3,300,000; leucocytes 22,000 (polymorphs 84 per cent). On Jan. 27th, 1920, under general anæsthesia, the liver was punctured by means of Potain's aspirator in the anterior abdominal wall one inch to the right of the linea alba, an abscess was found, 20 oz. being withdrawn, and into the cavity 75 c.cm. of normal saline containing 3 gr. emetine were injected. The fever rapidly abated. Before discharge the patient had put on nearly 14 lb. in weight. Treated with emetine injections and with ipecacuanha powders, he has remained in good health ever since (1923).

A straightforward case in which the improvement following aspiration was immediate and permanent.

CASE 2.—M., 25, admitted March 8th, 1920, discharged May 15th, 1920. Dysentery in 1918, no recurrence; pain in liver January, 1920, involvement lower lobe of right lung with slight pyrexia. Slight leucocytosis (9000) (polymorphs 62 per cent.). Fæces negative for *E. hisiolytica*. March 23rd, 1920: liver aspirated in seventh intercostal space, 13 oz. of pus obtained and 3 gr. emetine in 10 c.cm. saline injected: re-accumulation of pus necessitated second aspiration three weeks later, 19 oz. removed. On April 27th abscess formation suspected for third time, 6 oz. of clear serous fluid aspirated, no pus; medicinal treatment, 23 gr. of emetine with pulv. ipecac., gr. v.; convalescence uninterrupted; increase in weight 7 lb.

This case demonstrates that re-formation of pus in the abscess cavity should not be regarded as spelling failure of aspiration, for a second attempt may effectually remove the focus. The effusion of serum

into the abscess cavity which eventually took place may represent a normal method of cure; it was noted by Annesley in 1828.

CASE 3.—M., 39, admitted on June 9th, 1920, eventually discharged on Dec. 9th, 1920. Numerous recurrences of dysentery since November, 1918; pain in left side May, 1920. Definite dull, tender swelling in epigastrium extending to left hypochondrium, slight pyrexia, cyanosis, and great cardiac distress; leucocytosis 20,000. Fæces: active, *E. histolytica*. Under local anæsthesia (2 per cent. novocaine with adrenalin); aspirated in sixth left intercostal space, 43 oz. of thick pus (containing *E. histolytica*) obtained. Aspiration took two hours to complete. A second operation was undertaken a week later as the respiratory and cardiac symptoms persisted, the abdomen being opened under local infiltration anæsthesia. The liver was still enlarged and three further aspirations yielded 8 oz. blood-stained pus. A fortnight afterwards condition improved; pulmonary signs at left base diminishing. The Wassermann reaction being positive, he was discharged in order to obtain further injections of N.A.B. He was readmitted on Nov. 20th, 1920, for a full course of treatment with E.B.I., dysenteric symptoms having supervened. Since then there has been no recurrence either of hepatic or dysenteric symptoms, and he has put on over 14 lb. in weight.

This was evidently a left lobe abscess. On admission the general condition contra-indicated general anæsthesia. The removal of the first 43 oz. of pus by aspiration, by relieving the pressure, apparently saved the patient's life, who, at that time, would have succumbed to any major operation.

CASE 4.—G., 41, admitted on Nov. 12th, 1920, discharged on Dec. 20th, 1920. In July, 1920, noted a dull aching pain in his right shoulder, gradually spreading to the side of his chest, most intense along the anterior costal margin, and worst at night; sweats, cough, and loss of weight had followed. On admission he had severe hepatic pain, also irregular pyrexia (temp. 101° F.) with increased liver dullness. Red cells 3,700,000; leucocytes 8800 (polymorphs 75 per cent.); fæces contained cysts of *E. histolytica*; no visible ulceration of the rectum. On Nov. 16th, 1920, aspiration in epigastrium opposite eighth costochondral junction resulted in the withdrawal of 28 oz. liver pus; 3 gr. emetine in 10 c.cm. of saline were injected into the cavity. Patient experienced great relief, but profuse sweating occurred. Liver dullness normal in 10 days. Subsequent treatment: seven injections of emetine, 1 gr. and 18 gr. of E.B.I. Patient greatly improved, night sweats ceased, and he gained considerably in weight.

The initial shoulder pain was a dominant feature, also absence of any history of diarrhœa or dysentery, nor any evidence of active infection of the bowel were points worthy of note.

CASE 5.—W., 45, admitted Jan. 8th, 1921, discharged March 7th, 1921. Contracted dysentery in 1917, numerous relapses since. Shoulder and hepatic pain December, 1920. On admission clinical picture suggested acute cardiac distress; liver enlarged downwards below costal margin; dullness and signs of compression at base of right lung, together with intermittent pyrexia. Red cells 4,000,000; moderate leucocytosis 10–12,000 (polymorphs 73 per cent.); no cysts of *E. histolytica* in fæces while in hospital (though previously recorded on numerous occasions). X rays revealed stretching of dome of diaphragm, but little impairment of movement. Aspiration with local anæsthesia; aspirated in ninth interspace in anterior axillary line; 3 oz. thick pus withdrawn and 3 gr. emetine injected. Second aspiration 11 days later yielded 4 oz. similar pus. Owing to persistent pyrexia, in spite of emetine treatment under general anæsthesia, the abdomen was opened and the liver explored (11 punctures) without result. After further emetine injections he rapidly recovered and left weighing 10 st. 2 lb. (an increase of 8 lb.).

In this case the amount of pus was small in relation to the acuteness of the symptoms and the relief obtained after its withdrawal. It is probable that two small abscesses existed.

CASE 6.—C., 23, admitted Feb. 26th, 1921, discharged March 29th, 1921. As seaman had diarrhœa in Calcutta in November, 1920; latterly pain in left side and shoulder, painful swelling, size of large orange, in epigastrium; no pyrexia or diarrhœa or leucocytosis; fæces contained cysts of *E. histolytica*. Aspirated in epigastrium and three pints of pus obtained. After a course of E.B.I. 30 gr., wound healed and patient regained weight and condition.

A remarkable case possibly of a left hepatic abscess, attempting to burst to the exterior through the abdominal wall and at the same time producing little or no disturbance with only slight pain and no pyrexia.

CASE 7.—Mrs. B., 63, stewardess, admitted April 5th, 1921, discharged June 3rd, 1921. Frequent slight attacks of dysentery during last ten years, three years gradual loss of weight; three months abdominal pain and pyrexia; enlarged painful cervical glands one week. On admission obviously distressed and ill; complexion "muddy," thickly furred tongue, hectic pyrexia, profuse sweats, enlarged cervical and axillary glands. Slight enlargement and tenderness of liver below costal margin; definite abdominal tumour in left hypochondrium, apparently co-extensive with left lobe of liver and in splenic area a tumour, surmised to be the enlarged left lobe of liver. Lungs: Definite signs of compression, dullness at the right base; nocturnal cough. Advanced œdema of both feet; no albuminuria, moderate anæmia, hæmoglobin 70 per cent.; red corpuscles 3,000,000; leucocytosis 25,000. Fæces contained no cysts of *E. histolytica*. Heart sounds faint and feeble, pulse rapid (120) and irregular. Aspiration under local anæsthesia in right ninth interspace in axillary line produced 14 oz. of pus; 20 c.cm. eusol solution injected into cavity; immediate great relief. A second aspiration was undertaken after a period of five days, on account of persistence of signs at the right base without result. Pyrexia persisted for over a month. Medicinal treatment, pulv. ipecac. and emetine; of the former she had 155 gr., of the latter 9 gr. by injection.

On admission the physical condition of this patient was critical. The quite evident glandular enlargement, together with multiple tumours, suggested malignant disease. The abscess appeared to be situated in the lower portion of the right and extending into the left lobe of the liver. Improvement subsequent to aspiration was remarkable. A major abdominal operation in this case would undoubtedly have proved fatal.

CASE 8.—A., 27, admitted April 22nd, 1921, discharged July 11th, 1921. Diarrhœa and dysentery in Mesopotamia in 1916, invalided on this account. In March, 1921, pain in right chest and dull ache in right shoulder, cough, night sweats. On admission anæmic, emaciated, distressing cough, drenching sweats; pyrexia, 99°–101° F. Signs of fluid at right base, superficial œdema in axilla and over hepatic area. Considerable enlargement of liver; fifth rib in anterior axillary line to three inches below the costal margin. Appreciable anæmia; hæmoglobin 70 per cent., red cells 3,800,000; leucocytosis 11,000 (polymorphs 59 per cent., lymphocytes 33 per cent.). Fæces normal, no entamœbæ or cysts. Aspiration in ninth interspace in anterior axillary line; thick pus obtained, too viscid for aspiration. Resection of ninth rib where pleura was found forced up, pus (6 oz.) successfully evacuated with Cantlie's tube, subsequently exchanged for narrow rubber drainage-tube. Good recovery within a month. After convalescence course of E.B.I., 36 gr., increase of weight 14 lb.

This case illustrates the procedure to be adopted when the pus proves to be too thick for successful aspiration. Resection of the rib was necessary in order to obtain drainage; the wound began to close up three days after operation.

CASE 9.—S., 25, admitted on April 25th, 1921, discharged on May 9th, 1921. Dysentery in Mesopotamia in October, 1918, since when four relapses treated with two full courses of E.B.I. In October, 1921, rheumatic pain in right shoulder, pyrexia and wasting, tongue furred, complexion sallow and muddy—typical appearance. Great enlargement of liver, upwards to the third interspace and downwards into the abdomen; extension laterally into left hypochondrium. Little tenderness on pressure. Hæmoglobin 70 per cent.; leucocytes 11,000 (polymorphs 75 per cent.). Fæces: No entamœbæ or cysts. Under general anæsthesia liver punctured at point of maximum tenderness at seventh costo-chondral junction; 24 oz. typical pus obtained. Rapid diminution in size of liver. Medicinal treatment consisted of 16 injections of emetine, 1 gr. each. Before leaving hospital he had put on 9 lb. in weight.

A second abscess appeared after a lapse of one year and seven months, for he was readmitted on Jan. 2nd, 1923, with enlarged and tender liver, pyrexia, and a leucocytosis of 15,000. In autumn of 1922 he had complained of intermittent hepatic pain, shoulder pains, nocturnal sweats, and fever. Immediate operation under general anæsthesia and aspiration of 15 oz. of pus in epigastrium. Three weeks' treatment with emetine periodide and discharge on Jan. 30th, 1923.

The only instance in the present series of cases in which another abscess recurred after a prolonged interval. The second aspiration was unattended, as in the first, by any severe constitutional symptoms. The case also demonstrates the possibility of abscess formation after full courses of emetine-bismuth-iodide.

CASE 10.—H., 35, admitted July 14th, 1921, discharged August 15th, 1921. Dysentery in India, April, 1921; relapsed a month later. Soon suffered from hepatic pain, for which he was admitted. Definite enlargement of liver and bulging of chest wall; tenderness on pressure; drenching sweats. Hæmoglobin 70 per cent.; leucocytosis 16,000 (polymorphs 85 per cent.); red cells normal. Moderate intermittent pyrexia. Rash on both tibiæ resembling squamous syphilide, yielding to potassium iodide. Aspirated in ninth right intercostal space; about 1 oz. pus obtained and 3 gr. emetine were injected into cavity. Medicinal treatment consisted of intramuscular and hypodermic injections of emetine—14 gr. in all. The patient made an uneventful recovery, gaining 5½ lb. in weight.

A straightforward case presenting no unusual features. The good effects of the treatment were obvious.

CASE 11.—V. L., 37, admitted August 10th, 1921, discharged Sept. 27th, 1921. No previous history of dysentery. War service in Mesopotamia. First complained of hepatic pain in May, 1921; pain and swelling in region of gall-bladder, anorexia, and wasting. On admission very emaciated; tongue densely furred; dry lustreless skin. No signs in lungs. No upward enlargement of the liver; fullness in epigastrium, where palpable tumour co-extensive with the liver could be made out, giving the general impression of a malignant growth connected with the gall-bladder or pylorus. Slight pyrexia, no diaphoresis; hæmoglobin 70 per cent.; red cells 3,800,000; leucocytosis 12,000 (lymphocytes 36 per cent.). The fæces contained blood and mucus, free forms, and cysts of *E. histolytica*. Aspiration on August 15th, 1921, in epigastrium at the site of maximum tenderness, yielded 8 oz. liver pus. Medical treatment consisted of 10 gr. of emetine followed by a full 12-day course (36 gr.) of E.B.I. Rapid increase of weight and gain of 20 lb.

In this case amœbic dysentery coexisted with hepatic abscess. The situation of the tumour and its apparent connexion with the gall-bladder suggested at first sight malignant disease.

CASE 12.—W., 26, admitted Sept. 3rd, 1921, discharged Oct. 12th, 1921. Dysentery in Palestine in 1920; relapsed several times in 1921. Three weeks before admission was weak and fainted, and in falling hurt his right shoulder; pain persisted, relieved only by supporting elbow. Irregular pyrexia, drenching sweats, dry furred tongue; compression of base of right lung. Leucocytosis of 15,000; hæmoglobin 80 per cent. Fæces contained mucus and numerous *E. histolytica* cysts. Wassermann negative. Aspiration through eighth intercostal space in anterior axillary line yielded 2 oz. thick pus free from entamœbæ. Treatment, 195 gr. pulv. ipecac. and 7 gr. of emetine followed by a ten-day course of emetine-bismuth-iodide. Patient left hospital having gained 14 lb. in weight.

The shoulder pain was the dominating feature in this case and demonstrates the amount of physical pain and systemic disturbance which may be occasioned by an abscess of such small dimensions.

CASE 13.—U., 44, admitted Dec. 21st, 1921, discharged Feb. 16th, 1922. Dysentery in South Africa in 1918. September, 1921, pain in right side treated with calomel, but became very emaciated and lost altogether 28 lb. in weight; no jaundice, pyrexia, or sweating. Septic ulcer on upper lip; looked extremely ill. Dull, sallow, cachectic; pulse slightly accelerated; no respiratory embarrassment. Dullness at right base from seventh rib downwards; anteriorly from the fourth rib extending into the abdomen; laterally continued to left hypochondrium where the left lobe of the liver was palpable. X ray screening demonstrated immobilisation of the right dome of the diaphragm. No enlargement of lymphatic glands. Definite anæmia; red cells 4,000,000; hæmoglobin 70 per cent. Slight leucocytosis, 12,000. *E. histolytica* cysts found in fæces after numerous examinations. On Jan. 11th, 1922, aspirated through eighth intercostal space in mammary line, 64½ oz. reddish-brown liver pus obtained. No entamœbæ found. Remarkable improvement followed medication with pulv. ipecac. (gr. x. nocte), and a ten-day course of E.B.I. (30 gr.). End of January, 1922, liver normal size. Weight had increased from 136 to 148 lb., while in March, 1922, he reported weighing 165 lb., heavier than ever in his life. Has remained well ever since.

Here was a liver abscess of very considerable size, producing intense anæmia and cachexia without causing great embarrassment or pyrexia. Had it not been for the moderate leucocytosis and the presence of *E. histolytica* in the stools, the possibility of hepatic abscess could scarcely have been entertained. The recovery was as remarkable as it was rapid.

CASE 14.—K., 56, admitted May 16th, 1922, discharged May 27th, 1922. Diarrhœa in India, July, 1921. February, 1922, influenza with recurrence of dysentery; pyrexia, hepatic pain, and colitis, April, 1922; on emetine treatment intestinal symptoms subsided, but hepatic pain persisted. On admission sallow, nocturnal sweats, tachycardia, extension upwards of hepatic dullness, localised pleural rub in seventh interspace. No marked anæmia; leucocytosis 18,000. Fæces: no cysts of *E. histolytica*. Aspirated May 18th, 1922, under general anæsthesia, through eighth intercostal space; 3 oz. of pus located two inches deep in the liver. Medical treatment consisted of 8 gr. of emetine and he was discharged in order to undergo further anti-amœbic treatment at home.

The advantage of aspiration is brought out by the short duration of the patient's stay in hospital—11 days only!

CASE 15.—B. H., 46, admitted Jan. 8th, 1923, discharged Feb. 20th, 1923. History of amœbic dysentery 1915, with frequent relapses since. Present attack began on Dec. 15th, 1922, with dysentery. On Jan. 4th, 1923, dysentery ceased with the onset of acute epigastric pain, pyrexia, and headache. On admission patient was very toxic, in considerable pain, and the liver, which was very tender, was two inches enlarged downwards. Total W.B.C., 18,000. On Jan. 9th, 1923, under general anæsthetic, liver was explored in epigastrium half an inch to right of midline. Pus located at once close to surface of liver, very viscid, 3 oz. aspirated, no more obtainable, but much necrotic tissue felt. Symptoms partially relieved, but gradually returned, *in spite of emetine injections intramuscularly*. On Jan. 18th, 1923, with novocaine, re-aspirated 8 oz. of pus. Recovery now rapid. Later E.B.I. course administered. On discharge the hepatic condition was apparently normal, but some muscular paresis still existed, due, apparently, to emetine intoxication.

This case is of interest as showing that emetine alone will not necessarily effect a cure without aspiration.

Note on a Case Treated by Open Operation.

Only one other case of hepatic abscess was admitted to the hospitals under our charge during the latter part of 1919, before the adoption of the aspiration method of evacuating the liver pus. An outline account of the case is given below. Although differing in no essential feature from others of the series (especially Case 13), yet it must be conceded that neither in efficacy nor ultimate result were the results of open operation so satisfactory. The patient was subjected to three operations and remained over six months in hospital. Secondary infection of the abscess cavity with suppurative organisms had obviously taken place. A noteworthy feature of the case was the low degree of leucocytosis in association with an abscess of so large a size.

W., 29, admitted Dec. 30th, 1919, discharged July 2nd, 1920. Dysentery in 1916 in Egypt. Swelling of abdomen September, 1919, with diarrhœa, sense of weight in right side, profuse sweats, slight jaundice. Complexion sallow. Heart's apex, third interspace; half an inch external to nipple line; sounds faint and evenly interspaced. Liver dullness extended from fourth rib to umbilicus. Dullness posteriorly on right side below angle of scapula, measured in mid-sternal line distance from upper to lower limits of dullness, 10 inches. Varicosity of superficial epigastric veins. Slight pyrexia; slight anæmia. Hæmoglobin 80 per cent.; leucocytosis slight, 9000, never more. The fæces contained cysts of *E. histolytica*. Abdomen opened under general anæsthesia, and on cutting through the right rectus muscle two quarts of thin liver pus escaped. Drainage-tube inserted which, owing to shrinkage in size of liver, had to be straightened under anæsthetic. Persistent discharging sinus, which became secondarily infected with streptococci through the drainage-tube, and in spite of lavage, scraping, and vaccine therapy, refused to granulate up. On May 30th blockage of sinus with re-accumulation of pus occurred, necessitating a further anæsthetic and operative measures. The liver being punctured in other directions failed to yield any more pus; soon after the sinus healed up. Patient received altogether 400 gr. of pulv. ipecac. and 21 gr. of emetine; underwent three operations and was over six months in hospital!

Discussion.

We are firmly convinced, as a result of our experience, that aspiration should be regarded as the method of election in liver abscess; not only is the patient not exposed to the same risk and pain as in the open

operation, but also his stay in hospital is considerably shortened. In our series of cases the average stay in hospital was 29·8 days. Not only has the method these advantages, but also aspiration may be safely undertaken under local anæsthesia in cases with respiratory or cardiac embarrassment when operation under general anæsthesia is contra-indicated. We are convinced, too, that the failure of the earlier exponents of this method may be ascribed to the non-recognition of the necessity of anti-amœbic treatment in addition to operative interference. There were no deaths in our series of 15 cases.

Conclusions.

We venture, also, to draw the following conclusions:

(*a*) *As Regards Diagnosis.*—1. Liver abscess may often be present, when scarcely suspected, and may exist in absence of all suggestive laboratory tests (leucocytosis, pyrexia, ascertainable presence of *E. histolytica*). Therefore in cases of doubt aspiration should be undertaken. 2. A definite leucocytosis may not be present, but even if present, it is not usually a high one. 3. Pain in the right shoulder may be the most prominent and outstanding symptom. 4. Liver abscess may exist in the absence of any pain or tenderness referable to the liver area at all. 5. Entamœbæ may, or may not, be demonstrable in the aspirated pus; their absence, or rather the inability to demonstrate these organisms under the microscope, does not negative the diagnosis of amœbic abscess; neither can these organisms be demonstrated in the fæces in every case. 6. X rays may be of considerable assistance in diagnosis; immobilisation or stretching of the dome of the diaphragm should be regarded as a valuable positive sign.

(*b*) *As Regards Treatment.*—1. A general anæsthetic is not always required, aspiration can sometimes be successfully performed under local anæsthesia, with little or no immediate risk. 2. All available pus should be aspirated at the one operation. 3. Aspiration is followed by a great sense of relief; there is a complete absence of shock following the operation. 4. Re-accumulation of pus does not usually take place, but if it does aspiration may be repeated and be followed by a permanent cure. 5. The method is applicable to the conditions of general practice. 6. The injection of emetine into the abscess cavity is by no means essential, nor, in our opinion, advisable, but it is most necessary to treat the patient with large doses of emetine bismuth iodide by the mouth in order to clear out, if possible, the source of infection from the bowel, and so to prevent re-invasion of the liver by entamœbæ derived from the bowel wall.

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THE TREATMENT OF INTERNAL DERANGEMENTS OF THE KNEE-JOINT.

A NEW METHOD OF OPERATIVE EXPOSURE.

BY A. G. TIMBRELL FISHER, *M.C.*, F.R.C.S. ENG.,

ASSISTANT TO THE PROFESSORIAL SURGICAL UNIT, UNIVERSITY COLLEGE HOSPITAL; JOINT LECTURER ON OPERATIVE SURGERY, LONDON SCHOOL OF CLINICAL MEDICINE.

(*With Illustrative Plate.*)

THE method of exposure of the knee-joint for anomalous or complicated cases here described is the outcome of a somewhat extensive experience of cases of internal derangements of this joint, for during the last four years alone nearly 400 cases have passed under my observation. Many of these cases had been previously operated upon elsewhere by various surgeons and by various methods, and it has been possible to review the results of the operations without the bias that tends to creep into personal statistics. It is hoped to present a detailed study of the experience gained and of some further researches into the underlying physiological factors and pathological types at some future time. It has, however, been brought home very forcibly to the author that the results of operation for internal derangements fall very far short of the ideal which should be our aim. The percentage of cases with persistence of original symptoms or with troublesome sequelæ is still too high. The factors contributing to an unsatisfactory result are many, but in this paper it is my purpose to deal with one only, which, however, I consider to be one of the most important—viz., inadequate exposure with consequent incomplete operation. One has gradually become convinced that, with certain exceptions, most operations for internal derangement of the knee should be of the nature of an exploratory arthrotomy. This particularly applies to cases of long standing or with anomalous symptoms.

We are presented with an analogy in abdominal surgery. A comparatively short time ago it was considered a somewhat brilliant procedure to remove the chronically inflamed (*sic*) appendix through a button-hole incision. With a fuller knowledge of the multitudinous conditions which may simulate the chronically-inflamed appendix, and with the knowledge that the peritoneum, if treated kindly, is a good friend to the surgeon, abdominal operations partake more and more of an exploratory nature. Similarly, the synovial membranes of joints, if treated with respect, are good friends to the surgeon, and with careful technique aseptic results should be automatic, and there would appear to be no justification from this point of view for the small openings in the joint capsule so often employed.

Arguments in Favour of Exploratory Arthrotomy.

(*a*) *The Difficulty of Arriving at a Definite Diagnosis.*—It is notoriously difficult to arrive at an exact diagnosis in cases of internal derangement of the knee. I have come across several cases where symptoms have pointed to a lesion of the internal semilunar cartilage, whereas the external cartilage was at fault, and vice versa. I have known typical locking and limitation of full extension of the knee, which could not be reduced by manipulation, to be produced by a loose body. Furthermore, symptoms exactly simulating a lesion of a semilunar cartilage may be produced by hypertrophy of (Fig. 1), or hæmorrhage into, a synovial fringe (Fig. 2) or alar pad (Fig. 3). Loose bodies may be present and may be single or multiple, pedunculated or free. Again, sudden giving way of the knee is an exceedingly common symptom in osteo-arthritis with or without the presence of a definite mechanical cause. Rarer causes of anomalous symptoms are foreign bodies in the joint, isolated lipomata (Fig. 4), diffuse osteo-chondro-

matosis of the synovial membrane, and sarcoma (Fig. 5). Extra-articular causes, such as exostoses, interfering with tendon action, which may give rise to somewhat similar symptoms, must be excluded before arthrotomy.

(*b*) *Coexistent Pathological Factors.* — A fact of fundamental importance, which is not yet sufficiently understood, is that many cases of internal derangement of the knee, particularly those that have persisted over long periods, are associated with other intra-articular pathological conditions. Some of these have already been mentioned. The loose bodies deserve a little further mention. The presence of synovial chondromata or osteo-chondromata is, in my experience, not infrequent in association with a damaged semilunar cartilage, or with a detached portion of the articular surface forming a loose body. They are usually associated with chronic synovitis and with the increased vascularity of the synovial membrane which accompanies this, or, on the other hand, they may be associated with the increased vascularity of the membrane that I have shown to occur in the earlier stages of osteo-arthritis. Occasionally one sees in the same joint, associated with some mechanical derangement, loose bodies that have arisen in this manner, and also those which have their origin in detached periarticular chondro-osteophytes, occurring in osteo-arthritis. I have encountered hypertrophy of the infra-patellar pad of fat, which may become densely fibrous—so that it cuts like an unripe pear—or cartilaginous, or even bony. It is impossible in a short paper to do more than briefly touch upon some of the commoner coexistent pathological conditions. It is desired to emphasise that in the absence of an adequate exposure coexistent conditions are particularly liable to be overlooked.

It is often asked, "Is it justifiable or desirable to operate upon cases of internal derangement in which osteo-arthritic changes have supervened?" The answer is that no hard-and-fast rule can be formulated, and that each case must be treated on its merits. In every case the age and general condition of the patient, the stage of the disease, whether progressive or quiescent, and the proportion between the symptoms due to the osteo-arthritic condition, and those due to mechanical derangement, have to be carefully considered. If the changes are localised, and evidently due to mechanical irritation, they will obviously progress while the cause persists, and there is reason to believe that such an operation may prevent generalised changes. It is surprising to find in many cases quite a marked degree of osteo-arthritis which is giving rise to remarkably few symptoms per se, and yet locking or sudden giving way of the joint is due to some definite mechanical cause. In these cases, the removal of the latter, where possible, may prove to be a very satisfactory procedure.

Criticism of Some Common Operative Exposures of the Knee-Joint for Internal Derangement.

(*a*) *Transfixion and Local Removal of a Loose Body.*—Although this method is still recommended by many modern text-books, it is an unscientific relic of pre-antiseptic days, when the opening of a joint was a formidable procedure. A full exposure of the joint is imperative, and failing this other conditions or coexistent loose bodies not always evident in the skiagram will almost certainly be overlooked. There is, however, no objection to transfixion provided that a complete exposure follows.

(*b*) *Curved or Straight Lateral Incisions over the Joint Interval.*—These incisions, save in very exceptional circumstances, do not yield such satisfactory results as the more complete exposure to be described later; and through them it is impossible to explore fully the anterior compartment of the joint save by digital examination. The latter procedure is to be thoroughly deprecated. The finger under no circumstances should be introduced into the joint. Although surgeons still exist who advocate this procedure, it is extraordinarily significant that these are the same surgeons who advocate post-operative drainage of the joint. By the exposure to be shortly described, the whole of the anterior compartment of the joint, including the supra-patellar pouch, is *exposed to sight* by suitable retraction. Through the semicircular incision it is, moreover, easy to remove a structure which may resemble the semilunar cartilage very closely, but which, in reality, has originated in an extension of the infra-patellar pad of fat upwards near the patellar margin. I have before me as I write such a specimen; it is composed of dense fibrous tissue of almost cartilaginous consistency, and closely resembles a semilunar cartilage. The operator was on the point of closing the joint under the impression that he had removed the cartilage, when further retraction revealed the latter still present.

(*c*) *Transpatellar Route.*—This undoubtedly gives a good exposure of practically the whole of the anterior compartment, and, doubtless, in the hands of the master who originated the method, it is an excellent procedure and attended with good after-results. I believe, however, that the method to be described later is simpler in performance, gives a better exposure, is a less severe operation, since it involves no division of bone or articular cartilage, is less likely to be followed by osteo-arthritic changes, and is attended with a shorter convalescence. It appears to have been hitherto overlooked that there are objections on physiological grounds to the transpatellar route, particularly if the most accurate apposition of bone and cartilage be not obtained. It has been shown that no true cartilaginous repair takes place in incisions in the centre of articular cartilage, but that incisions, if they heal at all, do so by an imperfect fibrous tissue. Moreover, I found experimentally that in certain cases not only did failure of union occur, but the cartilage on either side of the incision underwent necrosis. If, moreover, we examine the specimens of fractured patella in pathological museums we shall see in many cases degenerative changes in the articular cartilage surrounding the site of cleavage. It appears that in these cases, *particularly when apposition is not perfect*, the irregularity and imperfect union of articular cartilage actually act as a source of irritation and may, particularly in individuals past the meridian of life, set up a form of traumatic osteo-arthritis. The latter may not necessarily be sufficiently marked to be apparent on X ray examination, but is clinically recognisable by a harsh "nutmeg grating" on moving the patella from side to side upon the trochlear surface of the femur with the knee extended, and also by aching and pain after exercise.

The Operation.

The stages described are particularly applicable to cases where symptoms point to the inner side of the joint. If symptoms point to the outer side of the joint, the positions of the incision in the skin and capsule are reversed. The skin is prepared by the iodine method and a tourniquet used. Aseptic results are in my clinic automatically obtained.

Stage 1.—Make a slightly curved incision through skin and subcutaneous tissues (Fig. 6). This incision commences above in the mid-line an inch above the uppermost limits of the supra-patellar pouch, skirts the inner border of the patella and the inner border of the ligamentum patellæ, and ends below slightly to the inner side of the tubercle of the tibia. The flap of skin and subcutaneous tissues is reflected outwards to slightly beyond the outer border of the patella. The skin flaps are protected by gauze, or the incision may be made through a covering of sterile gauze or stockinette which is afterwards clipped to the skin edges.

Stage 2.—Make a mid-line incision through the well-defined layer of fascia covering the quadriceps tendon (Fig. 7). Prolong this downwards and slightly inwards to the middle of the upper border of the patella. Thence continue in the mid-line of the patella through the same layer of fascia and through the somewhat thinner fascia covering the centre of the ligamentum patellæ as far as the tubercle of the

tibia. This incision should avoid the subjacent quadriceps tendon, the periosteum on the front of the patella, and the ligamentum patellæ.

Stage 3.—The above-mentioned fascia is raised and reflected inwards by a few light touches of the scalpel (Fig. 8). Above, a few fibres of the vastus internus may with advantage be included in the base of the flap. Below, the base of the flap should be half an inch from the inner border of the patella and from the inner border of the ligamentum patellæ.

Stage 4.—The above-mentioned fascial flap is to be well retracted inwards by the assistant. Next the capsule is divided a quarter of an inch from and parallel with the inner border of the patella (Fig. 8). The incision is carried upwards somewhat obliquely through the inner fibres of the quadriceps tendon, carefully avoiding any muscular fibres of the vastus internus; and below, the incision is carried through the capsule at the inner border of the ligamentum patellæ (see dotted line Fig. 8). The synovial membrane is next divided along the line of division of the capsule save in the extreme lower part of the incision.

Stage 5.—The patella is dislocated to the outer side of the joint, and on further flexion of the joint an excellent exposure is obtained of the whole of the anterior compartment (Fig. 9). The introduction of the finger into the joint, as already mentioned, is quite unnecessary, since with suitable retraction every part is brought into sight.

It will have been noted that the lower portion of the incision in the capsule opens up the region of the infra-patellar pad of fat and alar pad (so-called "alar ligament") which here project into the joint. This is next divided if necessary, one or two ligatures being often desirable at this spot even if a tourniquet be used. If the operation be performed for loose bodies, this stage is not always necessary. This step, however, undoubtedly facilitates the dislocation of the patella and gives an even better exposure. In Fig. 9 a "bucket-handle" type of lesion of the internal semilunar is represented, and was drawn from an actual case. The ligamentum mucosum is not represented, as it was absent in this case. I have not found that normally it obstructs the view of the opposite side of the joint. If, however, it is unusually well developed, it may be divided and subsequently sutured.

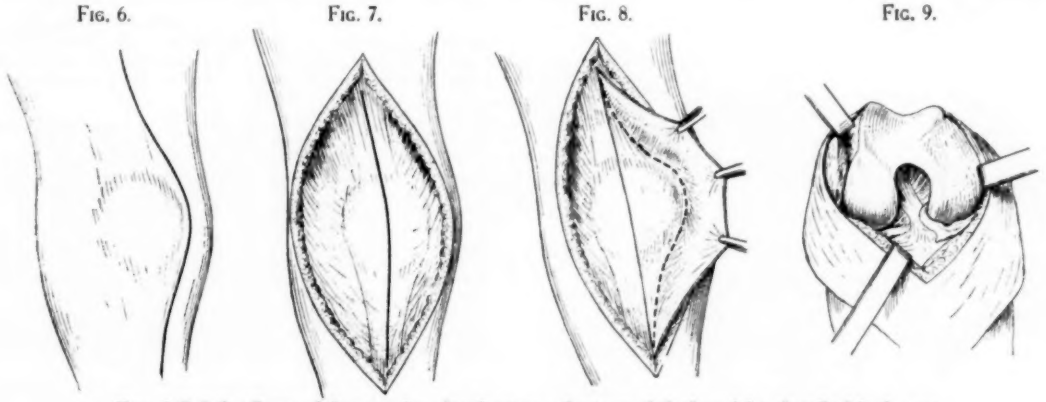
Personally, I cannot see any objection to moving the joint during the operation, and have more than once been upon the point of closing a joint after a careful search has revealed nothing abnormal, when, on flexing or rotating the knee, a loose body has shot out from the back part of the joint, or the detached posterior end of, or a tag of, cartilage split from the circumference of the semilunar cartilage has come into view.

On completion of the intra-articular stage, the knee is extended and the patella is easily replaced. It is my practice to suture the synovial membrane with a continuous suture of fine catgut. The incision in the alar pad should be carefully sutured, but if the latter is pathologically enlarged, it should be removed. The capsule is next sutured with a continuous suture of stout chromicised catgut. Next the flap of fascia is replaced and sutured in the mid-line with a continuous suture of medium-sized catgut. Thus the opening into the joint is closed after the fashion of a double-breasted coat. The skin is sutured with interrupted silk-worm gut sutures. The tourniquet is not removed until dressings and bandages are firmly in position.

After-treatment.

No splint is used. The limb is supported in a position of slight flexion with pillows. The silk-worm stitches are removed on the seventh day, and massage and movements, both active and passive, instituted, the patient being allowed to sit in a chair daily. At the end of two weeks the patient is allowed to commence to walk about. Massage and movements are continued. At the end of three weeks patients are usually able to walk fairly well, and at the end of the fourth week almost normally. Post-operative swelling is rare in my experience, and I believe it to be usually due either to the trauma inflicted on the synovial membrane by inadequate exposure, or to a mild degree of sepsis due to the introduction of the finger into the joint. Both factors are necessary concomitants of inadequate exposure.

FIG. 6. FIG. 7. FIG. 8. FIG. 9.



FIGS. 6, 7, 8, 9.—Stages of the operation of exploratory arthrotomy of the knee-joint, described in the text.

Illustrative Cases.

The following are illustrative cases, selected from a large series.

CASE 1.—A man wounded in the right knee in August, 1915, at the Dardanelles by a shrapnel bullet. A short note made in August, 1917, states: "Knee creaks on movement, no fluid present. Flexion to 90°. Extension full." October, 1920: "Loose body can be felt. Knee swells after walking three or four miles. Movements as before." December, 1921: "A loose body was removed from the joint through a small incision on the outer side."

Condition on Admission.—Right knee: Two small healed scars present, one at the outer side of the patella, the other in the popliteal space. Small operation scar on outer side over joint interval. Well-marked thickening of synovial membrane on either side of patellar ligament. No obvious lipping of articular margins present.

Movements.—These, accompanied by harsh crepitus, were as follows: Flexion slightly restricted; extension full, but in passing from angle of 135° to full extension there is a very obvious sudden slipping forward of the tibia over some obstruction in the outer part of the joint with an audible "click." Some wasting of the thigh. X ray examination, in addition to showing a mass of new bone projecting into popliteal space, reveals the presence of many loose bodies in the anterior compartment of the joint, one of which lies in the supra-patellar pouch (Fig. 10).

Operation.—This was performed by the method detailed above. The external alar ligament or pad, with the corresponding part of the infra-patellar pad of fat, was found

studded with osteo-chondromatous nodules (Fig. 11), which, although projecting slightly into the joint cavity, were for the most part deeply embedded. The affected area was removed entire. A similar body, with a very long twisted pedicle, was removed from the supra-patellar pouch, and several enlarged synovial villi, apparently not as yet chondrified, were removed. The posterior end of the external semilunar cartilage was found completely separated from its attachments and displaced forwards so that it was in contact with the anterior half (Fig. 12). The whole cartilage was removed with the greatest ease. There were no obvious signs of osteo-arthritis present. The wound was sutured in the usual fashion.

This case is of interest in demonstrating the advantage of a complete exposure and the futility of limited incisions in such cases. It is possible also that the passage of the shrapnel bullet through the joint caused the displacement of the posterior horn of the semilunar cartilage. The patient has made an excellent recovery, has full movement in the joint, and is free from symptoms. The cause of the persistent synovitis having been removed, as also all enlarged villi, the prognosis is good, particularly as osteo-arthritic changes are absent.

CASE 2.—This is an example of the advantage of the exposure in a case of osteo-arthritis with loose bodies. The patient stated that he first noticed loose bodies in his right knee-joint in 1916. The knee is weak, but the principal trouble consists in frequent giving way of the joint with temporary locking. There is one inch wasting of the right thigh. X ray shows well-marked osteo-arthritic changes with general lipping of the articular margins, and two large loose bodies in the supra-patellar pouch.

Operation.—Exposure as above. Partial erosion of central parts of articular cartilage noted with well-marked lipping. Two disc-shaped cartilage-covered loose bodies were removed from the supra-patellar pouch. These were obviously detached chondro-osteophytes. A small pedunculated cartilaginous growth was removed from the lower end of the anterior crucial ligament, and two other portions of synovial membrane loaded with hypertrophied villi were removed.

Result.—Patient markedly improved. No longer complains of giving way of the knee. Movements are full.

In many cases of osteo-arthritis the principal symptom consists in painful locking or giving way of the knee. These are particularly suitable cases for operation, other things being equal. With early movements and careful after-treatment no limitation of movement need be expected. In cases with effusion it has the additional advantage that the thick, often jelly-like, synovial fluid can be evacuated and the joint thoroughly flushed out with an antiseptic. In many cases this procedure has in my hands apparently cut short the disease.

CASE 3.—The patient fell and twisted his knee on Jan. 5th, 1921. Was in hospital for several weeks and treated for "synovitis of knee." On May 30th the knee gave way suddenly and he fell, fracturing his right humerus. On August 8th the internal semilunar cartilage was removed elsewhere. On Nov. 21st he complained of pain on full flexion and extension. Small amount of fluid present. Walked with a limp and stated knee was weak. There was pain on outer side of patella. On April 5th, 1922, external semilunar cartilage removed elsewhere. On June 8th he stated knee was worse. Considerable amount of fluid present. The joint still "let him down."

Condition on Admission.—Two curved incisions were present, on inner and outer aspects of joint respectively. There was some thickening of the synovial membrane but no free fluid. Full flexion of the knee was restricted and painful. No evidence of osteo-arthritis, but X ray showed unnatural opacity of the infra-patellar pad of fat.

Operation.—On full exposure by above-mentioned incision it was seen that *both semilunar cartilages were present.* The internal was normal, but the external, although not fractured or completely detached from its periphery, was abnormally loose, with a fibrous and attenuated inner border, and was accordingly removed. The infra-patellar pad of fat was markedly thickened, and, after removal, cut like an unripe pear, owing to the dense fibrous tissue it contained. The joint was closed in the usual manner and the patient is making an uneventful recovery.

The fact that this patient had undergone operations by the "classical" routes upon both cartilages, and a more complete exposure showed them to be both present is particularly instructive. The finding of a cartilage alleged to have been removed has befallen me several times, and it is a strong argument in favour of complete exposure.

CASE 4.—A seaman aged 35. Eight weeks before admission the ship pitched and he fell with his weight upon his right knee upon the deck. The knee was locked for a short while and became swollen. He lay up for five days, but afterwards carried on his duties.

Condition on Admission.—He complained of swelling of the joint, pain on walking, and frequent "giving way" of the knee. X ray showed some diminution of the joint interval on the inner side, but joint surfaces were quite clear. This fact was of interest in view of the operation findings. There was some thickening of synovial membrane, particularly on inner side of joint. No fluid at time of examination; movements full; no lateral mobility. There was well-marked tenderness over anterior end of internal semilunar cartilage which became accentuated when, on fully extending the leg, the anterior end came in contact with the finger. Owing to this fact it was considered unlikely that the condition was one of simple displacement of the anterior end of the cartilage. The diminution of the joint interval on the inner side, with also the presence of full extension, appeared to point to a "bucket-handle" type of lesion, and this was subsequently confirmed.

Operation.—This was performed by the above-mentioned route. A splendid view of whole of anterior compartment of joint was obtained. A "bucket-handle" type of lesion of the internal semilunar cartilage was seen to be present (Fig. 9). A longitudinal split had occurred; one portion had been displaced into the intercondylar notch, whereas a narrow portion of the cartilage still remained attached to the capsule. No osteo-arthritic changes were present.

In lesions of the semilunar cartilage of this type a complete exposure of the anterior compartment of the joint is particularly to be desired, as otherwise the portion of the cartilage lying in the intercondylar notch may easily be overlooked.

CASE 5.—Male, aged 47, twisted the right knee at football 19 years ago, after which the knee occasionally gave rise to trouble which, however, was not a serious source of inconvenience, until he received a kick from a horse in 1916. After this second accident the knee frequently gave way, locking being followed by synovitis and joint effusion. In 1918 arthrotomy was performed, exposure being obtained through a curved incision on the inner aspect over the joint interval. Unfortunately, no report of this operation could be obtained, but his symptoms persisted as before and were in no way improved.

In 1921 the attacks of locking were marked, and, in addition, the pain and swelling were so far increased that an eminent surgeon recommended immobility and extension by means of a Thomas ambulatory calliper splint. In 1922 he was operated upon by a London orthopædic surgeon, exposure being obtained through a curved incision on the inner aspect of the articulation, "a considerable portion of the internal semilunar cartilage being removed." But there was no improvement in his condition.

Condition on Examination.—I examined him three months later, and found a condition of chronic synovitis with effusion. Flexion was not possible beyond an angle of 90°. Clinical and X ray examination both negatived osteo-arthritic changes. Two small superimposed healed incisions were present on the inner side of the joint. As was not surprising, the patient's attitude was one of scarcely veiled opposition towards the medical profession; he had suffered much of many surgeons during the past seven years, at least two of whom were of European repute. He was, however, anxious for something further to be done.

Operation.—An excellent exposure of the whole of the anterior compartment of the joint was obtained by the method under discussion. The synovial membrane was obviously in a state of chronic inflammation, and certain necrotic fringes on the point of detachment were removed, as were also a few loose "melon-seeds." At first no mechanical cause of derangement could be seen, but on more careful examination it was found that the posterior end of the internal semilunar cartilage was still present, was loose, and was evidently the cause of the persistence of the locking and synovitis. There was a complete absence of true osteo-arthritis. By exercising a little patience the offending fragment was completely removed. On account of the condition of the synovial membrane it was considered advisable to wash out the joint cavity with sterile normal saline solution.

After-history.—This patient made an uneventful recovery and one of the most rapid in my series of cases; four weeks and one day after the operation he left my care, walking almost normally, with a full range of joint movement and complete absence of effusion. There has been no recurrence of his previous symptoms.

MR. TIMBRELL FISHER: OPERATIVE EXPOSURE OF THE KNEE-JOINT.

(Figs. 6–9 appear in the text.)

FIG. 1.

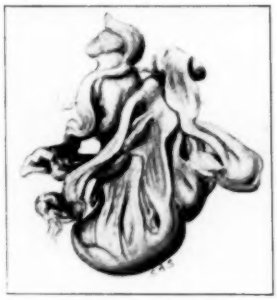


FIG. 1.—Hypertrophic synovial fringe from knee-joint. (No. 716 A, St. Bartholomew's.)

FIG. 4.

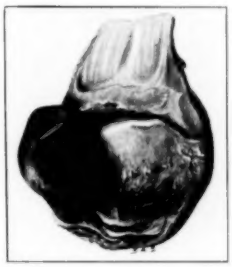


FIG. 4.—Pedunculated lipoma of synovial membrane. (No. 716 B, St. Bartholomew's.)

FIG. 5.

FIG. 5.—Pedunculated sarcoma of synovial membrane. (No. 569 E, St. Bartholomew's.)

FIG. 2.

FIG. 2.—Hæmorrhage into a synovial fringe. (Mr. Cecil Rowntree's case.)

FIG. 3.

FIG. 3.—Hæmorrhage into infra-patellar pad. (No. 843, St. Thomas's.)

FIG. 10.

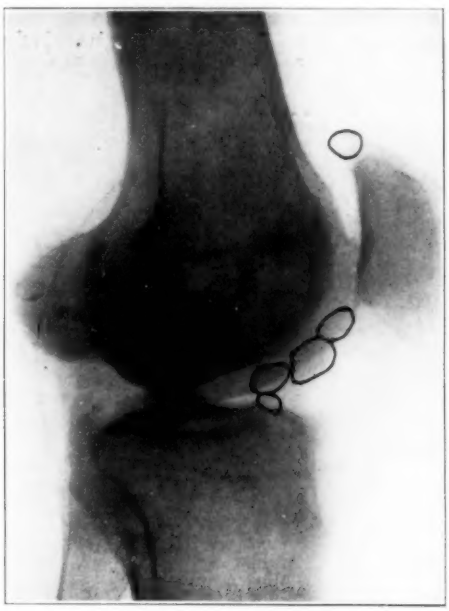


FIG. 10.—Radiogram of Case 1, showing mass of new bone projecting into popliteal space, and many loose bodies in the anterior compartment of the joint.

FIG. 11.

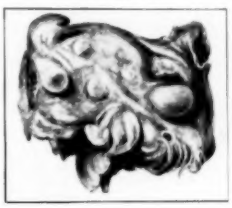


FIG. 12.

FIG. 11.—Case 1, external half of infra-patellar pad of fat.

FIG. 12.—Case 1, external semilunar cartilage, of which the posterior portion was displaced forwards. The corresponding half of the infra-patellar pad was studded with osteochondromata (see Figs. 10 and 11).

(*Fig.* 1 *appears in the text.*)

FIG. 2.

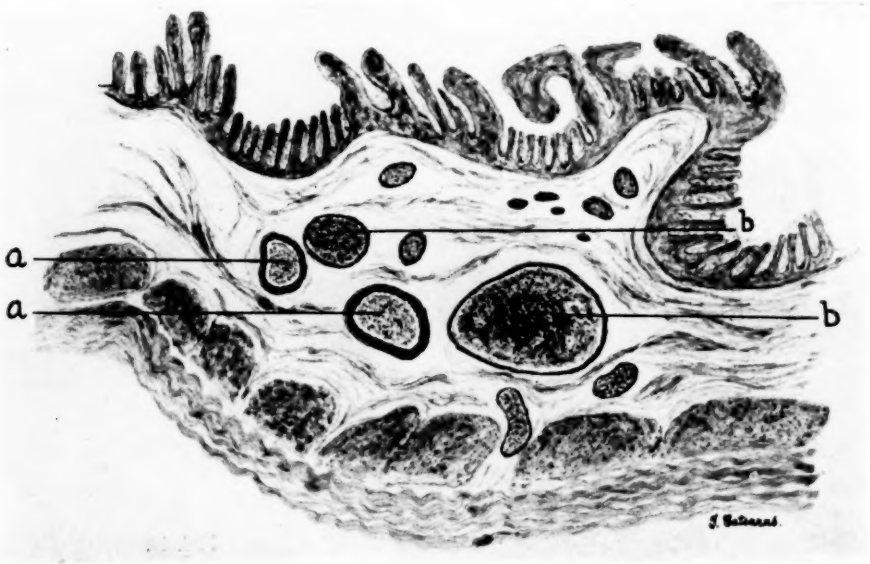


FIG. 2.—Microscopic section of infarcted small intestine. In the gas-distended mucosa appear (*a*, *a*) arteries and (*b*, *b*) veins, distended and full of blood, but without alteration of their walls. (Reichert, oc. iv. obj. 3.)

FIG. 3.

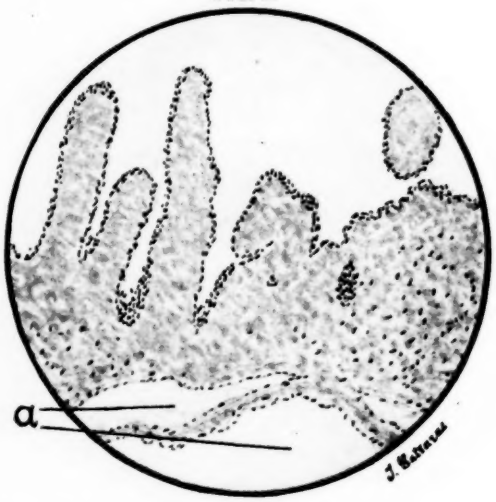


FIG. 3.—Microscopic section of small intestine. Coloration by Gram's method (magnified 310 times). The intestinal villosities are completely necrosed and covered with a continuous layer of bacilli taking the Gram colour, and penetrating subjacent layers. (*a*) indicates part of an emphysematous cavity.

FIG. 4.

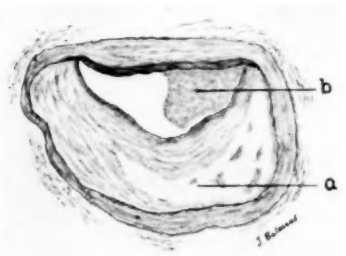


FIG. 4.—Transverse section of left femoral artery: (*a*) Tunica intima very much thickened, with formation of atheroma; (*b*) lumen of artery greatly narrowed, with formation of a recent thrombus.

FIG. 5.

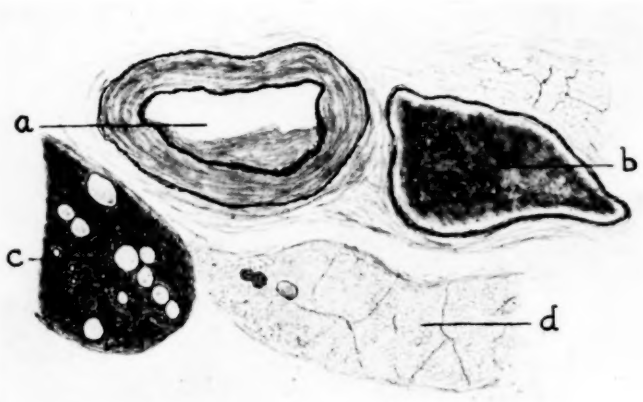


FIG. 5.—Microscopic section of mesentery: (*a*) Artery, with fibrous thickening of intima, complete obliteration of lumen, and no blood in the artery: (*b*) satellite vein gorged with blood; (*c*) lymphatic ganglion containing gas bubbles; (*d*) adipose tissue.

The removal of the persistent posterior end of a semilunar cartilage when the anterior portion has already been removed is not an easy operation under any circumstances, and is one requiring the best exposure possible. The persistence of symptoms after the previous operations demanded a complete exposure, and through this a complete removal of all necrotic synovial fringes and melon-seed bodies was also possible.

In conclusion, it is my pleasant duty to express my thanks to Prof. C. C. Choyce for kindly reading the proofs of this paper and for many helpful suggestions, to Dr. L. R. Shore for the loan of the figured specimens from St. Bartholomew's Hospital Museum, and to Sir Robert Jones for the kindly interest he has evinced in this method.

A CONTRIBUTION TO THE STUDY OF THROMBOSIS OF THE MESENTERIC ARTERY.

BY DR. ALEXANDER CAWADIAS,

HEAD PHYSICIAN OF THE EVANGELISMOS HOSPITAL, ATHENS; LATE CHIEF OF THE PARIS UNIVERSITY MEDICAL CLINIC, BEAUJON HOSPITAL.

In collaboration with DR. J. CATSARAS,

PATHOLOGIST OF THE EVANGELISMOS HOSPITAL; JOINT PROFESSOR OF PATHOLOGY.

(*With Illustrative Plate.*)

THROMBOSIS of the mesenteric artery is not very rare, and, indeed, many cases are to be found in the monographs of Lagane,[1] Trotter,[2] Leo Brady,[3] de la Rousselière,[4] and Fernandez Martinez.[5] But it has not received sufficient attention in the classical systems of medicine or treatises of diseases of the intestines, and in ordinary practice is comparatively seldom considered in diagnosis, the great majority of the published cases having been recognised at operation or necropsy. The following case thoroughly studied in the medical clinic of the Evangelismos Hospital, Athens, shows some interesting pathological data.

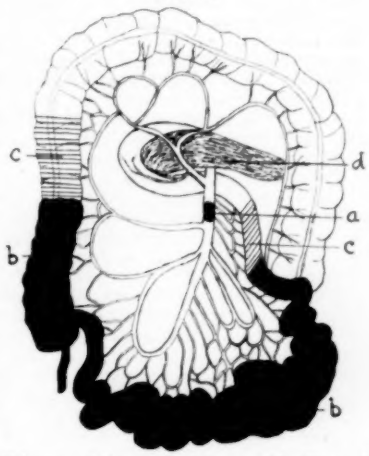
Clinical History.—On March 2nd, 1921, a shoemaker consulted one of us (A. C.) for shortness of breath. In 1915 (six years before the date of our first examination) intermittent claudication first appeared, and he was unable to walk for more than 60 or 80 yards without severe cramps in the legs, specially in the right leg. Early in 1920 this syndrome disappeared and was replaced by paroxysmal pains in the arms. At the end of 1920 these pains disappeared, but other troubles took their place; any attempt to walk or make any effort is at once brought to a stop by severe pre-sternal pain radiating into the axilla. The only points of importance brought out by the clinical examination were in connexion with the circulatory system. The heart was enlarged and the transverse diameter a little increased. There was slight arrhythmia, with a systolic apical murmur, only partly obliterating the first sound, propagated into the axilla. Pulsation was absent in the dorsal pedis arteries. The patient's sole complaint was of shortness of breath; there was no other trouble, no pain in the abdomen, no digestive disturbance, and before his present illness his health had always been good. He was advised to come into hospital for more complete examination, but did not do so until eight days later, when he was suddenly seized with violent abdominal pain, followed by severe vomiting, and was at once admitted to hospital.

Condition on Examination.—He then complained of severe abdominal pain localised in the right iliac fossa, where there was increased muscular resistance and exacerbation of the pain on pressure. He vomited bluish-black liquid with a slightly fæcal odour. No discharge of either fæces or gas. Face pinched, eyes sunk deep in orbital cavities; a general expression of anxiety, in fact, a typical hippocratic face. Respiration was superficial, costal in type, 40 per minute. Hands and feet bluish and cold. Pachon's oscillometer showed only imperceptible pulsation of the tibial arteries.[6] A few c.cm. of urine were obtained, but did not show any pathological change. The picture was that of acute peritonitis, but consideration of the patient's previous history led to diagnosis of an obliteration of the mesenteric artery.

Post Mortem.—Three hours after admission to hospital the patient died; a post-mortem examination was made eight hours after death.

Intestine.—In the lower part of the ileum the ordinary colour of the intestine passes suddenly to a blackish colour which extends, becoming more and more intense, to the rest of the ileum, the cæcum, and part of the ascending colon (Fig. 1). Throughout the infarcted small intestine there were numerous gas bubbles forming agglomerations of different volume and inflating the intestinal mucosa. This "emphysematous state" terminated at the ileo-cæcal valve, the cæcum and ascending colon being totally free from it. The intestine was filled with extravasated blood of tarry consistency. Microscopically all the intestinal coats were completely necrosed. The submucosa of the whole small intestine was distended, and the connective tissue broken down (Fig. 2), so that in many places there were irregular cavities, a real emphysematous state of the intestine. The villi are covered—as is shown in sections stained by the Gram method—with a continuous layer of microbes, specially bacilli, which are very numerous in the submucosa, muscular, and subserous coats. They are short, straight, or slightly curved, and Gram-positive (Fig. 3). The lesions of the infarcted colon were similar but less pronounced than in the small intestine.

FIG. 1.



Schema of intestinal infarct: (*a*) Place of obliteration of superior mesenteric artery; (*b*) part of intestine altered by infarct; (*c*) zones of simple hyperæmia; (*d*) pancreas.

Circulatory System.—Heart enlarged, weighing 420 g.; edges of mitral valve and chordæ tendineæ thickened, and musculi papillares fibroid in many places. Coronary arteries sclerotic and in many places calcified; lumen of left coronary artery being almost completely obliterated by calcareous infiltration, so that it barely admitted a bristle. The aorta in its whole extent, from its origin in the heart up to its bifurcation, showed atheromatous bosses and plates, some calcareous, some ulcerated, these lesions being much more advanced in the abdominal aorta. The orifices of most of the intercostal arteries were obliterated. Common, internal, and external iliac arteries completely calcified and markedly narrowed. A transverse section of the left femoral artery in Scarpa's triangle showed complete obliteration by a thrombus. The superior mesenteric artery was transformed into a hard cord, and on section was seen to be completely obliterated by recent thrombosis above the origin of the right superior colic artery. Its small branches between the layers of the mesentery appeared to have collapsed, and though not obliterated, showed, microscopically, sclerotic thickening of the intima without formation of atheroma. The finest twigs of the mesenteric artery, the arterioles of the intestinal walls in the submucosa, did not show any appreciable lesions (Fig. 2). They contained a little blood. The small mesenteric veins situated between the two layers of the mesentery were dilated and full of coagulated blood. Many of those visible at the insertion of the mesentery were full of gas bubbles, which were also present in the trunk of the portal vein. The finest mesenteric veins in the submucosa were much dilated and full of blood.

Other Organs.—The rest of the digestive tube showed nothing special. The liver anæmic, light-brown in colour, weighed 1400 g. There was pulmonary œdema.

Clinical Remarks.

This case presents two points of special clinical interest; first, it is a remarkable example of a pluri-arterial syndrome; the aorta, coronary, iliac, femoral, and mesenteric arteries showed arterio-sclerosis. The patient's first symptoms were those of intermittent claudication, pointing to stenosis of the iliac or femoral arteries; later he suffered from angina

pectoris, due to an aortic or coronary lesion, and, lastly, he died from intestinal infarction, terminal syndrome of arteritis of the mesenteric artery.[7] It should also be noted that symptoms of intestinal arterio-sclerosis (paroxysmal abdominal pain, colic stasis) were absent, and that this lesion manifested itself only in its terminal syndrome, the intestinal infarction.

The second interesting clinical point was that diagnosis was made during life. In our case there was absence of hæmatemesis and sanguinolent diarrhœa—symptoms considered as characteristic of this affection. We founded our diagnosis on the fact that the patient showed an acute peritoneal syndrome, and had a long history of athero-sclerosis with arterial clinical manifestations. Our attention was directed towards the mesenterio-vascular thrombosis on account of a case published by one of us in collaboration with Dr. Laignel Lavastine,[8] showing that the diagnosis of intestinal infarction can be oftener made if this possibility is borne in mind, as should always be done, for, as recently proved by Fernandez Martinez of Grenada, it is frequent enough.

Integrity of the Small Intestinal Vessels.—Lagane[1] in a very important work on intestinal arteritis affirms that the obliteration of an important artery is not in itself sufficient to produce complete and extensive intestinal infarction, and that the additional factor necessary is obliteration of the small vessels in the intestinal wall—arterioles, venules, capillaries—otherwise a compensatory collateral circulation would be established. Lagane's view is not proved by any anatomo-clinical observation. On the contrary, in our case the little vessels of the intestinal wall are intact (Fig. 2), some of them even showing dilatation of their lumen. Our view, founded on the present case, is that the lesion of these little vessels is not necessary, and that, even when healthy, these vessels cannot establish a sufficient collateral circulation. It is not the first case met with in pathology of an anatomically non-terminal artery which comports itself physio-pathologically as a terminal one. The entire vascular territory of the superior mesenteric artery can be injected by anastomatic channels from the aorta, but in the living being different conditions control the distribution of the circulating blood. And in the case of a rapidly developing obliteration of the main stem, or of an important branch, these anastomoses are not sufficient.

Intestinal Emphysema.—Our case presented a morbid change which is not described as a sequel of mesenteric obliteration—namely, "intestinal emphysema." The intestinal coils were distended in great part with gas, bubbles small and big being found in the submucosa. (In this connexion it should be remembered that the necropsy was made eight hours after death.)

Pathological Physiology of the Infarction.—From this observation the mechanism of the production of the infarction may be regarded as follows: The circulation of the blood through the arteries of our patient was much interfered with, and with the onset of heart failure became worse. Slowing of the blood flow in the vessel and disease of its walls were the two conditions favouring the production of thrombosis. On the other hand, heart failure which diminishes the blood pressure in the arteries raises it in the veins, and consequently in the territory of the portal vein. When the mesenteric artery is obliterated and one of the most important factors in venous circulation disappears, this pressure becomes much greater, and retrograde inflow of blood from the portal vein territory is provoked. The conditions found at the necropsy of our patient provide proof of this retrograde circulation; the liver was paler than usual and a little anæmic, the reverse of what is found in heart failure. The mesenteric veins, even the finest venous twigs, are crammed with blood. But arterial ischæmia and venous hyperæmia are not sufficient to provide the physio-pathological key to the condition under discussion, and for the production of the necrosis of the tissues microbial intervention must be postulated. Our preparations show abundant bacterial infiltration, with a bacillus morphologically resembling *Bacillus perfringens* or *Bacillus phlegmonis emphysematosæ* of Welch, which are anaerobic gas producers and belong to the normal intestinal flora. Diminished resistance of the intestinal mucosa no doubt favoured the multiplication of these bacilli and probably the increase of their virulence.

Conclusions.

In this case hæmorrhagic infarction of the intestine appeared as a terminal syndrome of intestinal athero-sclerosis, of which it may be the only clinical manifestation. It can be diagnosed, if the thoughts of the clinician are directed towards this syndrome, even in the absence of the pathognomonic sanguinolent diarrhœa. It is produced even in the absence of alterations of the small blood-vessels, by obstruction of a sufficiently large artery. The arterial ischæmia and the venous stasis resulting from this obstruction impair the defensive mechanism of the intestinal mucosa and promote multiplication and augmentation of the virulence of the anaerobic bacilli which determine necrosis. The gangrenous necrosis in this case was a real gas gangrene.

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AN EPIDEMIC OF "FOURTH DISEASE."

BY HUGH M. RAVEN, M.R.C.S. ENG.

THE diagnosis between scarlet fever, German measles (epidemic roseola), and "fourth disease" is proverbially so difficult that I think the following account of an epidemic, of which no diagnosis could be made at the time, is of interest, and should elicit valuable experiences and views from others.

In June and July, 1922, in a school of 80 girls and staff, there was an epidemic of 12 cases with the following symptoms and course. The onset was acute, with temperatures varying from 102° to 104° F.; slight vomiting in two cases, otherwise none; and on the first day a scarlatiniform rash, scarcely affecting the face, but coming out at once all over the body and legs, where it was somewhat raised and very irritable. This latter symptom was marked in nearly all the cases. The cases with the highest temperatures did not necessarily have the most copious rashes; only when the temperatures were high was there any rise of pulse-rate, and then only in proportion to the temperature. The throats showed a scarlet injection of the palate and fauces. The pyrexia lasted from seven to ten days. The tongues, though not covered with a thick white fur, peeled typically about the fourth day. The glands were not much enlarged in the early stage, except in one case, where the posterior cervical group were involved; but in this case, and in three others, there was secondary enlargement with pain and a little fever. Peeling began on the fifth to seventh day on ears, neck, and body, some powdering of the face, and was quite definite and complete, including the hands and feet, in all but two cases. One case, however, never peeled at all. But it is interesting to note that the desquamation had no relation to the intensity of the eruption. There was slight albuminuria in one case only, and no rheumatism or other complications in any. None of the patients could be called ill or toxic, although one patient became somewhat

exhausted with attacks of recurring enlarged glands, and left-sided peritonsillitis in the third and fourth weeks.

Cause of Infection.

The cause of the infection was reduced to one of two sources: (1) A concert attended by the whole school in a neighbouring town, where, I heard, there had been some cases of scarlet fever and German measles; the concert was 18 days before the first three, and 21 days before the fourth case (a mistress). (2) A maid developed a fibrinous tonsillitis (which proved not to be diphtheritic) seven days before the first three cases. She came from another neighbouring town where scarlet fever had been prevalent. After a few days she developed a quinsy, not the first in her life, and went home to convalesce, returning to her duties at the school on July 1st.

The parents of the children had been notified when the first four cases occurred, and a good many pupils had returned home. About 20 days after the first four cases, one child was taken ill at home, and her medical attendant diagnosed mild German measles, slight rash, slight faucial redness, a cold, and no peeling. (Only one other child was reported ill after returning home, developing measles on August 12th, and I cannot think that this has anything to do with our cases.) On July 6th four more cases occurred, on the eighteenth day after the removal of the first four to the sanatorium, and five days after the maid returned to the school; and this time the latter was sent home for good. The second four cases conformed to type, perhaps a little less severe; marked scarlatinal rashes, very irritable on the legs, red throats (two with some follicular tonsillitis, and these two children had later glandular complications). I may note here that one of the first four cases was a child who had had chorea; though her pyrexia was somewhat persistent, and her usual movements rather more marked, she did not develop endocarditis, or recur as an acute chorea.

Diagnosis of Scarlet Fever.

At this stage, all the cases were seen by an experienced colleague, who diagnosed them as scarlet fever. Three other patients developed the disease 18, 19, and 20 days from the second batch of children. Two conformed to type and peeled markedly; one of these had secondary enlarged glands and slight albuminuria. This was the school matron, who was said to have had German measles twice; she had the rash on her face, and also some conjunctivitis. The second case was the sanatorium maid; the third was a maid in the school whose rash was somewhat morbilliform and did not peel, but without catarrh and with the red throat. It should be mentioned that one of the children is said to have had scarlet fever, and one to have had German measles.

Here we have an epidemic with an incubation period of 18–21 days with all the signs and symptoms of scarlet fever, and without widespread infection to others. The occurrence of the case of tonsillitis just before the epidemic, and her return six days before the second four cases may have been misleading; yet had she been allowed to remain who can tell what further cases might have arisen? Apparently she infected no one at home.

The Case Against Scarlet Fever and Roseola.

On reflection one feels that the cases conform most closely to the description of "fourth disease," but I think it would be a brave medical officer who would risk not treating them as scarlet fever, while my experience of roseola has never brought me in contact with cases of such rashes and throats without catarrh, enlarged posterior cervical glands, and a wide epidemic.

For simplicity I tabulate as follows the important points against scarlet fever: (1) Incubation (assuming the maid did not start the epidemic); (2) no sequelæ or complications, except secondary enlarged glands; (3) no early vomiting, except in two cases slightly; (4) the case of German measles developed at home and possibly the last case described. Against roseola was the following evidence: (1) Acute onset with high fever; (2) almost universal absence of rash from the face; (3) peeling tongue; (4) absence of catarrh, especially in the eyes (except one case).

I am disposed to agree with Dr. C. Dukes,[1] of Rugby, that German measles is a diagnosis loosely applied to two diseases—epidemic roseola and "fourth disease," which should not be confused. The danger of confusion is much greater between "fourth disease" and scarlet fever. But, after all, what is the value of a diagnosis when one is not able to isolate an organism? I am led to think that the streptococcus and its numerous relatives are at the bottom of most of these cases, and that the toxin of the various members of the family, virile or less active, of the first or third or fourth generation, may produce an irregular, though similar, series of manifestations. I should be very glad to be told of references to bacteriological work on this subject, which might be helpful when faced with such an epidemic.

Broadstairs.

NOTE ON THE OPERATIVE TREATMENT OF MALIGNANT DISEASE,

WITH SPECIAL REFERENCE TO THE TONGUE.

BY HERBERT J. PATERSON, C.B.E., M.C. CAMB., F.R.C.S. ENG.,

SENIOR SURGEON, LONDON TEMPERANCE HOSPITAL.

IT will hardly be disputed that within the last decade the operative treatment of carcinoma has not made such strides as might have been anticipated. It behoves us from time to time to search out the reason for lack of progress, and to consider our technique, to see if in any way this is at fault, or in what way it can be bettered. I sometimes wonder whether we appreciate fully the part played by the lymphatic glands in Nature's defence against the spread of carcinoma. May it not be possible that in modern surgery the glands are attacked too ruthlessly?

Two truths are established. A malignant growth spreads peripherally by invasion of the surrounding tissues, and distally by permeation of the growth through the lymphatics to the lymphatic glands into which they drain, which thus become infiltrated with growth. Most surgeons have met with cases where operation for a malignant growth has been necessarily incomplete, in that glands obviously infiltrated have been left behind, in spite of which fact the patient has lived 10, 12, or even more years, and in some instances has apparently been cured. Is it not a fair inference from this that the lymphatic glands are Nature's defence against distal spread of the disease—in other words, that such patients have lived, not in spite of, but because of the incomplete removal of glands? It seems clear that the lymphatic glands arrest, for a time at any rate, the progress of cancer cells; it is even possible that they may be able to a limited extent to deal effectively with such cells. Does this suggest a modification of our technique?

Possible Advantage of Glands as Wound "Scavengers."

The modern practice aims at the removal of the whole of the growth, together with all contiguous glands, in one piece. If we could be certain of removing the whole of the growth and leaving no isolated cancer cells behind, this procedure would undoubtedly be correct. In practice, however, it must be rarely possible to remove a malignant growth without leaving a few cells, either in the surrounding tissues or in the wound, as a result of the necessary manipulation of the growth. When cancer cells are left in a wound some or all of them probably permeate along the lymphatics to the nearest lymphatic glands, where, temporarily at any rate, their progress is arrested. If, then, all removable glands have already been removed, the

[1] THE LANCET, 1900, ii., 89, 1384.

cancer cells may find their way to more distant groups of glands which are beyond the reach of surgical intervention. It is possible, therefore, that if the glands draining the region occupied by the growth are left, they may arrest the cancer cells which have remained behind, and prevent their spreading to more distant parts. After these glands have thus "scavenged" the operation area they can be removed before the cancer cells arrested in them have time to spread to more remote regions. These considerations are especially applicable to cancer of the tongue. In operation for lingual carcinoma it is obviously impossible to remove the growth and glands in the neck in one piece. A track of lymphatics is left between the site of the growth and the glands in the neck. This is one reason why operation for cancer of the tongue is followed so frequently by rapid recurrence. The lymphatics in this irremovable area are permeated with cancer cells. These cells may multiply in situ or migrate to distant glands leading to metastases. This suggests the speculation, what would happen if, when the growth is removed, the glands in the neck were left for the time being. Might not the cancer cells left behind be temporarily arrested in the glands of the neck?

Operation in Two Stages.

These hypotheses suggested a trial of the results of operation in two stages—i.e., removing the growth at the first operation, using cautery rather than knife, and then three or four weeks later removing the glands. It seems to me that in this way any cancer cells left behind in the lymphatics would find their way to the nearest glands and be removed with the glands at the second operation. I operated for cancer of the tongue by this method five times previous to the war. During the war I had no further opportunity of trying this method. The results in these few cases are so encouraging as to suggest further trial of this plan of campaign. The first operation was performed in January, 1914, and the growth was reported by Dr. E. F. Bashford to be of a very malignant type. In 1921, seven years later, this patient came to see me, and to my surprise I could find no trace of recurrence either in the mouth or neck. This prompted me to inquire as to the results in the other four patients. I traced three of them and found that they were all well, nearly seven years after operation. Presumably the remaining patient had died.

I would suggest, therefore, that in cases of carcinoma of the tongue (1) the growth be removed by the actual cautery; (2) three weeks later the glands in the neck be removed in the usual way.

I have latterly been trying the same plan in operation for breast carcinoma, but whether it is advantageous or not it is too early to say, but as far as cancer of the mouth is concerned it seems to be a rational procedure worthy of further trial.

Clinical and Laboratory Notes.

A CASE OF STREPTOCOCCAL MENINGITIS.

BY STEPHEN G. ASKEY, M.D. CAMB.

THE following case of streptococcal meningitis with operation and recovery is of interest.

History.—The patient was a boy, aged 12, whose family history was good. For two and a half years he had had slight cervical lymphadenitis; in the abdomen he had a few palpable glands and occasional attacks of pain. He was subject to naso-pharyngeal catarrh with temporary deafness, and was often unwell and away from school for a few days at a time. In 1919 Mr. A. C. Gavin removed his tonsils and adenoids.

Condition on Examination.—On Jan. 22nd, 1923, I saw the boy on account of earache. He had considerable deafness, especially on the right side; right tympanic membrane slightly thickened; no mastoid tenderness, but a small gland below the right pinna was very tender. Several slightly tender glands along anterior aspect of upper third of right sterno-mastoid, and some enlarged glands on left side of neck also. These glands were larger a year ago.

Further Examination.—On Jan. 26th Mr. Gavin saw him and reported deafness in both ears with the right tympanic membrane indrawn and thickened. Rinné tuning-fork test negative in both ears. A soft whisper heard at 12 ft. from either ear. Right tympanum ventilated inadequately owing to a nasal spur meeting right inferior turbinal and blocking this side of nose.

Course of Case.—On Jan. 29th he began to have great occipital neuralgia on the right side, with normal pulse and temperature and no mastoid tenderness. On Feb. 3rd I saw him at 11 A.M., when he still had neuralgia; pulse and temperature normal, no visible change in ear, no vomiting, fundi normal, knee-jerks normal. Owing to persistent neuralgia I warned the parents of the possibility of meningitis. Half an hour after I left the house the boy vomited violently without warning. I saw him again about 2 P.M., when he was vomiting. The occipital neuralgia had ceased and he complained of left frontal headache. The temperature was 103·5° F., and the pulse-rate 108. There was no mastoid tenderness; Kernig's sign absent, neck muscles normal. Left knee-jerk present, but right knee-jerk only just obtained on reinforcement. Plantar reflexes indefinite; no nystagmus.

At 9 P.M. Dr. A. E. Russell saw him. Kernig's sign then present, neck muscles definitely rigid, knee-jerks absent except for a flicker on the right on reinforcement. No paralysis of eye muscles, no mastoid symptom. Lumbar puncture under light anæsthesia revealed a turbid cerebro-spinal fluid under reduced pressure. Prof. L. S. Dudgeon examined the fluid that night and reported a pure culture of streptococcus the next morning.

Operation.—On the 4th Mr. W. H. C. Romanis saw the boy, who was vomiting frequently. Although there were no signs whatever of mastoid disease we advised an exploration of the right mastoid as offering the only chance, and that a poor one, of saving the boy's life. At 2.30 P.M. Mr. Romanis operated. There was a small area of diseased bone at the tip of the mastoid. The mastoid cells contained pus. The diseased mastoid was gouged away and the antrum was found full of pus. The antrum was irrigated with hydrogen peroxide, and the wound partly sutured, a gauze drain being inserted down to the antrum. The dura was not touched.

Recovery.—On the night of the operation the boy vomited twice, and not again. Pulse-rate and temperature began to fall at once (see chart); after 24 hours the gauze drain was changed and the wound irrigated; these processes were continued daily until March 11th, when only a fine probe could be inserted. Knee-jerks began to return on Feb. 8th. The boy made an uninterrupted recovery and is about again. There is no impairment of mind, and at the time of writing his general health is better than it has been for a year. The condition of the right tympanic membrane is unchanged.

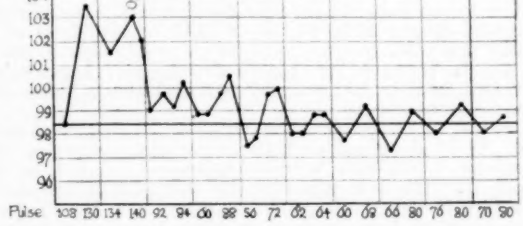

Chart of case of streptococcal meningitis showing fall of temperature after operation.

This was an undoubted case of generalised streptococcal meningitis, the organism being obtained in pure culture from the lumbar region of the cerebro-spinal canal. The meningitis was well established and the cerebro-spinal fluid only dripped slowly on lumbar puncture, both factors being said to increase the gravity of the prognosis. At operation the dura was not opened. The absence of signs of mastoid inflammation was rightly disregarded.

Balham, S.W.

A CASE OF SPONTANEOUS RUPTURE OF THE HEART.

BY R. LEONARD LEY, M.B., B.C.CAMB.,
ASSISTANT SURGEON, GREAT YARMOUTH HOSPITAL.

THE following case came under my notice recently, and seems worthy of record.

A married woman, aged 85, enjoyed good health for her age. On Feb. 2nd she told her son she was going out to collect her old age pension. He left the house at 4.40 P.M., when she had her things on ready to go out. He returned at 6.15 P.M., and found her lying in a heap in a corner of the room, dead. He called me in; I satisfied myself that she was dead and told him that I must inform the coroner.

At autopsy I found the body well nourished, with no marks of external violence. On opening the pericardium I found it distended with fluid blood and large clots. Altogether there must have been quite four ounces. On mopping up the fluid blood and removing the clots, I found nothing abnormal on the anterior surface of the heart, but on raising the apex and examining the posterior surface I found three vertical purple lines, the two external ones being nearly three-quarters of an inch, and the central one a quarter of an inch, in length. These on closer examination proved to be slit-like openings in the visceral pericardium. I then removed the heart. The aorta and aortic valves presented nothing of note, but on cutting into the heart muscle it proved to be extremely friable, and was greasy and fatty-looking. On cutting down to the apex of the left ventricle I found a dark clot firmly attached at a point near the septum and about one inch from the apex, corresponding to the openings on the posterior surface. Cutting into the muscle, after removing the clot and exposing the opening on the inner surface, I found minute clots in the substance of the heart wall. Evidently the inner wall ruptured first, and then the blood gradually dissected its way through the wall of the ventricle, finally bursting into the pericardium and causing death by pressure.

The predisposing cause here was, no doubt, old age and a fatty heart. There could hardly have been any great exertion. It seems doubtful even whether the old lady left the house.

Great Yarmouth.

A CASE OF TRAUMATIC RUPTURE OF THE AORTA.

BY P. ROWLAND KEMP, M.B., CH.B. EDIN.,
CASUALTY OFFICER, LONDON TEMPERANCE HOSPITAL, N.W.

THE following case is of sufficient interest to merit record.

On Jan. 17th, 1923, a male, aged 46, was admitted, dead, to the casualty department, with a history of having been struck on the head and chest by a portion of a stone fly-wheel which had separated while revolving at full speed in a motor works. He had a large abrasion over the sternum, an abrasion over the right malar bone, and an incised wound of the chin.

Post-mortem findings were as follows:—

Thorax.—An extravasation of blood into the subcutaneous tissues, and underlying the pectoralis major, in area of abrasion. An extravasation of blood into the anterior mediastinum. The sternum was fractured obliquely from above downwards and backwards at the level of the third to fourth costal cartilages. The lungs were deeply congested. The pericardium was greatly distended with blood which had escaped from a transverse tear of the aorta, just beyond the line of the aortic valve. The exuded serum was under considerable pressure.

Skull.—Beyond a firm adhesion of pia mater to dura over the upper part of the right posterior segment of the cerebrum, nothing abnormal was detected in the cranium.

For permission to publish the notes of this case I am indebted to Dr. H. H. Sanguinetti, pathologist to the London Temperance Hospital.

THE Cambridge University Press announce that they will publish "The Domain of Natural Science," by Prof. E. W. Hobson, Sc.D., LL.D., F.R.S., during the summer.

WEST KENT MEDICO-CHIRURGICAL SOCIETY.—A meeting will be held to-day, Friday, May 11th, at 8.45 P.M., at the Miller General Hospital, Greenwich, London, S.E. The President, Dr. W. H. Payne, will take the chair.

Medical Societies.

OPHTHALMOLOGICAL SOCIETY: ANNUAL CONGRESS.

(*Concluded from p. 899.*)

Mr. D. V. GIRI contributed a paper on

Intracapsular Extraction of Cataract, with Description of a Simple Technique.

It was based on 384 cataract operations he did at Bikaner, Rajputana, India. He had to resort to the intracapsular operation because his patients came long distances, were very poor, and time was of great value to them. One patient became so restless after the incision, and rolled his eye so much, that the operation could not be done step by step; hence the operation had to be done speedily, and he therefore expressed the lens in its capsule. Very little pressure was needed, and it came away without mishap. After that he proceeded deliberately to take out the cataract in toto. He described his procedure. The lids were best held apart and controlled by an assistant throughout the operation. For immature and intumescent cataracts the intracapsular was, he said, the operation par excellence. If capsulectomy was properly done, the mature hard cataracts shelled out easily as a whole. In a large percentage of mature and hard cataracts the capsulectomy operation gave results which compared favourably with the intracapsular. The worst cataracts to deal with were the hypermature and complicated. Mr. Giri discussed minutely every step of the procedure and compared it with other methods.

The Bowman Lecture was delivered by Prof. G. E. DE SCHWEINITZ (President of the American Medical Association). He took as his subject Certain Ocular Aspects of Pituitary Body Disorders, mainly Exclusive of the Usual Central and Peripheral Hemiopic Field Defects. (The Lecture was annotated last week, p. 912.)

Disorders of the Blood and their Ophthalmological Manifestations.

A discussion on this subject was held on April 27th. Sir HUMPHRY ROLLESTON, in opening the discussion, said that whereas patients with renal disease, arteriosclerosis, or affections of the central nervous system might first seek medical advice on account of ocular symptoms, and a diagnosis of underlying general disease might be made from the local changes, such was rarely the case in disorders of the blood. The disorders which he discussed were erythræmia, pernicious anæmia, subacute combined degeneration of the spinal cord, aplastic anæmia, chlorosis, secondary anæmia (post-hæmorrhagic), splenic anæmia of adults and of infants, leukæmia (with chloroma), scurvy, purpura, hæmophilia. The underlying cause of erythræmia was still a matter for further research; possibly it might prove to be a syndrome due to various causes. The frequency of ocular manifestations in it was as yet indeterminate. The visual disorders were variable, and could not be solely explained by the appearance of the fundus. In pernicious anæmia small retinal hæmorrhages were usually present; according to Cabot they occurred in over 70 per cent., and they were said to be seen when the red cells fell to 25 per cent. of the normal. In subacute combined degeneration of the cord the ocular manifestations were mainly those of anæmia—dimness of vision and pallor of the disc; also slight papilloedema. There might be sluggishness, small size and inequality of the pupils, and nystagmus, owing to degeneration in the cervical cord. Retinal hæmorrhages and neuro-retinitis might occur in aplastic anæmia. In some of the cases of this now rare disease there was permanent impairment of vision. In severe secondary anæmia, hæmorrhages into the retina were very common, and this was probably chiefly due to the underlying toxæmia. In the chronic splenic anæmia of adults he did not know of

any special changes in the fundus. In the splenic anæmia of infants (Von Jaksch's anæmia pseudo-leukæmica infantum) retinal hæmorrhages probably occurred, but he could not state with what frequency. In Gaucher's disease the conjunctivæ showed a wedge-shaped thickening of brownish-yellow colour with its base to the cornea, first appearing on the nasal side of each eye. Foster Moore described three stages in the retinal changes accompanying leukæmia: (1) engorgement of the vessels, chiefly the veins; (2) the previous engorgement was accompanied by hæmorrhages having a central white spot, due to leucocytic accumulation; (3) a general leucocytic infiltration of the retina and choroid, causing thickening. Contraction of visual fields and night-blindness might also result in this disease. The visual symptoms were not of diagnostic importance in scurvy. Infantile scurvy might show petechiæ of the eyelids. In purpura flame-shaped hæmorrhages into the nerve-fibre layer of the retina were not uncommon, according to Foster Moore. In hæmophilia the retinæ may be free from hæmorrhages.

Sir FREDERICK ANDREWES, F.R.S., spoke on the pathology of disorders of the blood in relation to the eye. Functional disturbances of vision did not need much attention. When through heart failure or thrombosis the blood-supply to the retina was cut off or seriously reduced, vision might fail. In ordinary syncope temporary failure of sight might occur without structural change. Yet vision did not appear to fail in even the extreme degrees of pernicious anæmia; only in the post-hæmorrhagic form of anæmia did temporary blindness sometimes occur. Yet vision was commonly affected in the converse condition, erythræmia, in which the red cells and the total volume of blood were increased. Visible changes in the fundus took place as vascular alterations in blood conditions, and nowhere could the changes be so well studied. He believed that in chlorosis there was an increase in the fluid elements of the blood, and this was the only form of anæmia in which papillœdema had been observed to occur. He discussed œdema, extravasation of leucocytes, escape of red corpuscles, and leukæmia, remarking that it was possible the retinal hæmorrhages in the last-named depended in part on a weakening of the capillary wall from the emigration of leucocytes. He also entered into a minute consideration of the function of the blood platelets.

Dr. A. J. BALLANTYNE said that more than 50 per cent. of the cases of anæmia and leukæmia he saw in nine years showed fundus changes of some kind, including alterations of the calibre, course and colour of the vessels, œdema of the retina, retinal hæmorrhages, and retinal exudates. In simple anæmias there was a tendency to broadening of both arteries and veins, also to an abnormal tortuosity. Pallor of the discs was often visible, but notable pallor of the fundi was exceptional. Hæmorrhages were never found in the retina when the hæmoglobin was higher than 35 per cent. Often the hæmorrhages and exudates cleared up when the patient was at rest in bed.

Mr. R. R. JAMES said he had not seen fundus changes in chlorosis. He detailed the blood picture found in the various classes of cases he had examined during a period of 14 years' hospital observation.

Dr. BALLANTYNE read a paper on Some Illustrations of Retinal Vascular Disease, and of Fundus Lesions in Diseases of the Blood.

Mr. WILFRED TROTTER introduced a discussion on the

Diagnostic Significance of Proptosis.

He said diagnosis was still essentially a clinical procedure carried out in the face of experience presented to the medical man unselected and at random. He intended to present in this paper only material which came directly within his own knowledge, restricting his consideration to the grosser forms of proptosis. A broad division of cases could be made according to whether the eye was displaced antero-posteriorly alone, or whether the antero-posterior projection was combined with some other displacement. The first of these depended on swelling of the orbital tissues from inflammatory conditions or circulatory disturbance, the others to encroachment upon the orbital space by a swelling—generally a neoplasm—originating within or without it. The general surgeon mostly saw the first group in connexion with traumatic orbital hæmorrhage, thrombosis of the cavernous sinus, arterio-venous aneurysm within the skull, and Graves's disease. These he considered in detail. In the second group the cause at work was a swelling originating within or encroaching upon the orbit. The great point to determine was whether or not the cause was a malignant tumour. It usually was so when the eye was displaced forwards and also in the coronal plane. Such benign conditions, however, as mucocele of the accessory sinuses, exostosis of skull, and benign nasal growths could cause it. Malignant growths could be divided into those invading the orbit according to their place of origin, into those of ethmoid, sphenoid, and maxillary regions. Growths of the ethmoid and maxillary regions produced marked and early displacement in the coronal plane; growths of the sphenoid region tended to produce a downward and lateral displacement at a later stage. All these forms of malignant disease were of insidious onset, and often when their true nature was recognised they were beyond the hopeful reach of surgery. Growths of the ethmoid region were usually recognised by the rhinologist, in whose domain they came. Sometimes their course could be definitely delayed by operations which, at the time, appeared to be very unpromising. Growths in the sphenoidal region presented the greatest difficulties in early diagnosis; they were usually endotheliomata or sarcomata of the periosteal type. Sometimes they might be slowly developing for several years before causing unmistakable symptoms.

Mr. J. H. FISHER gave a general review of the subject. The term "proptosis" directed attention to something retro-ocular which was propelling the eye forward, or, more correctly, a falling forward of the eye because it was imperfectly restrained in its orbit by muscles. The prominent eyes of very obese persons occasionally brought them within the title, and he had had to perform tarsorrhaphy for this condition; this possibility should be kept in mind in diagnosis. Foster Moore had found the fat in the orbit in Graves's disease to be in an abnormal condition; but Treacher Collins considered that Müller's muscle caused the condition, regarding it as the homologue of the "protrusio bulbi" muscle of lower animals. The proptosis in Graves's disease was not always symmetrical, nor of synchronous onset in both eyes. In both this disease and orbital tumours X rays were often of but little value. As removal of optic nerve tumours, whether with or without resection of the outer orbital wall, rarely left a passable cosmetic result, he strongly advised removal of the blind eye with the growth in every instance. Traumatic exophthalmia would depend on the presence of a foreign body lodged in the orbit, or the pressure of extravasated blood, or infiltration of the tissues with air through the fractured walls of the orbit from the nose or some of its accessory sinuses. Hæmorrhage into the orbit might occur without accident, such as in children suffering from whooping-cough or scurvy, in hæmophilics, and in later years of life it was attributable to arterio-sclerosis. Cysts following hæmorrhage had been described. Congenital dermoid was the most frequent cyst of the orbit; others included hydatid and cysticercus, but these could only be proved by examination after operation. Cellulitis and infective osteitis of the orbit were easy to diagnose. In all cases of proptosis with inflammatory manifestations examination should be made for paralysis of any of the nerves running in the floor or outer wall of the cavernous sinus. Vascular tumours of the orbit with proptosis must be differentiated into pulsatile and non-pulsatile, the latter being mostly cavernous angiomata. He advocated association with the neurologist in dealing with intracranial causes of proptosis; these he dealt with seriatim. Similarly, in cases of extension of growths from the

accessory sinuses of the nose, the assistance of the rhinologist might be needed in dealing with septic conditions in those cavities. The rhinologist invoked the aid of the radiologist, but both together often gave the ophthalmologist less assistance than he needed.

DR. ANGUS MACGILLIVRAY said the apex of the cornea was between 12 and 14 mm. in front of the temporal margin of the bony orbit; when readings of over 14 mm. were taken, exophthalmos was present, when under 12 mm. enophthalmos. The routine use of the exophthalmometer was desirable. Proptosis due to increase in the orbital contents was the result of certain inflammatory, pathological, or traumatic conditions originating in the orbital cavity, such as periostitis, cellulitis, neoplasms, vascular derangements, and thickening of orbital walls. These were the main conditions causing proptosis which the ophthalmic surgeon was likely to be called upon to treat. He divided proptosis, for diagnostic purposes, into (*a*) bilateral, and (*b*) unilateral, the first being much the smaller division. He discussed them at length and said, in conclusion, that after 28 years of experience in the ophthalmic department of a large general hospital, he and his colleagues had come to regard proptosis as a danger signal, and the help of colleagues in other departments was sought without delay in arriving at a cause.

A Clinical Meeting.

In the afternoon a clinical meeting was held at London Hospital, where Mr. C. B. GOULDEN provided a series of cases for inspection and discussion.

Mr. W. T. HOLMES SPICER read a paper on Secondary Corneal Opacities.

Mr. F. A. WILLIAMSON-NOBLE read a paper on

Macular Changes Associated with Thrombosis of the Central Retinal Vein.

He described the appearances in four cases. In one case the sight of the patient, who was aged 27, had been failing 18 months before excision of the eye. There was old interstitial keratitis, the cornea being opaque and ectatic. He exhibited micro-photographs of sections cut at different levels. It showed the usual picture in venous thrombosis, and the thrombosis had occurred in the region of the lamina cribrosa. Sections of the half eye showed vascularisation of the middle and deeper layers of the cornea, and hæmorrhage in the nerve-fibre layer of the retina. There was slight œdema in the external molecular layer of the macular and perimacular region. He concluded (1) that in cases of thrombosis of the central retinal vein, a varying degree of œdema developed in the region surrounding the fovea, causing damage to retinal structures here; (2) that if œdema were of old standing or large in amount, some of the fluid percolated through the subretinal space, caused detachment of retina in the macular region, bringing about its degeneration.

Mr. F. A. ROSS and DR. SHEPHEARD-WALWYN contributed a paper, illustrated by photographs, on a case of

Mikulicz's Disease.

The patient was a married woman, aged 37. The bulging below the eyebrow was found to be due to a finely-nodular enlarged lacrymal gland. There were the usual symptoms and physical characteristics of the disease. The urine was normal, and the W.R. negative. Immediately preceding death she had air-hunger, cyanosis, and œdema of both lungs, the physical cause of death being acute nephritis and uræmia. The tubules of the lacrymal gland, according to Dr. Canti's report, were normal, but were pressed apart by masses of round cells containing a few fibroblasts and fibrous tissue cells. The various treatments tried and the clinical course were carefully set forth.

A number of other contributions were also submitted.

DR. MACGILLIVRAY read a paper on

Enucleation of the Eyeball under Local Anæsthesia.

He pointed out that the services of the expert anæsthetist were not always available, and in his absence the administration might be indifferent. In the search for a suitable local anæsthetic, a 2 per cent. novocaine solution was fixed upon, owing to its comparatively low toxic properties, and in practice their confidence in it had increased. The solution consisted as follows: novocaine, 10 gr.; sodii chloridi, 2 gr.; potass. sulph., 1½ gr.; aq. destill., ℥ 1. It should be kept in a stoppered bottle, and could be sterilised more than once without deterioration if adrenalin were not added. He described the procedure in detail. It was not necessary to prepare the patient as for general anæsthesia. To neurotic or frightened patients two 5-gr. doses of veronal were given the previous day—i.e., at 5 and 10 P.M. The method could be easily adapted to all forms of extra-ocular operations. He believed that when once the details of the method of securing local anæsthesia had been properly grasped, it would become the routine, general anæsthetics being reserved for young children.

Microscopy of the Living Eye.

Mr. BASIL GRAVES described, with diagrams, the main principles of illumination of the eye, and discussed the selection of a suitable nomenclature for certain conceptions which, arising out of this new work, at present, he said, lacked suitable definitive terms. He felt that a vague, equivocal or unjustified use of certain terms was creeping into the English-written literature of the subject. Some of these terms had a very precise significance in the nomenclature of the physics of light, and he suggested that, for the present, the unsubstantiated appropriation of these was apt to lead to confusion amongst writers, and lacked scientific accuracy. He suggested certain non-committal terms (to indicate various clinical effects which he showed by diagrams). One of these was "relucency" for that property of a transparent living tissue in virtue of which a beam of light traversing it underwent modification to be revealed as a manifest illumination of the tissue. He demonstrated a small portable hand appliance to yield an intense beam 4 mm. in diameter, for use in inspecting the eye, or in such operations as needling, with the aid of which the operator could clearly see the membrane to be needled by taking his view through tissue whose transparency was not impaired by aberrant rays of light. He discussed the Zeiss binocular eye-microscope, and described means by which the optical system of its illuminator could be improved for practical routine work.

During the period covered by the Congress, an exhibition of instruments and appliances was held in the Marcus Beck Laboratory of the Royal Society of Medicine.

ROYAL SOCIETY OF MEDICINE.

SECTION OF OTOLOGY.

AT a meeting of this section, held on April 20th, Sir CHARLES BALLANCE presiding, a discussion took place on the morbid anatomy and drainage of

Otitic Meningitis.

Mr. EDWARD D. DAVIS, who introduced the subject, based his remarks upon 13 autopsies and a number of specimens seen in London museums. Otitic meningitis of the middle fossa and cortex of the brain was, he said, much more frequent than that of the posterior fossa, and it was usually secondary to a temporo-sphenoidal abscess, or there was localised meningitis. In the 13 autopsies, thick gelatinous pus was always found in the cisterna interpeduncularis, and it extended thence into the subarachnoid space, along the large cerebral vessels. In front, the pus spread along the optic chiasma and anterior cerebral artery to the longitudinal fissure, to form a collection above the corpus callosum. More frequently, suppuration extended backwards by the posterior cerebral arteries and around the crura to form an abscess between the tentorium and the superior surface of the cerebellum. Collections of pus were present at the following situations: in the internal auditory meatus

and posterior surface of the petrous bone in front of the lateral sinus; in the cisterna interpeduncularis; between the tentorium and the superior surface of the cerebellum; and in the longitudinal fissure above the corpus callosum.

In order to demonstrate the paths of infection, a series of experiments were carried out on the cadaver, the subarachnoid space being injected with a solution of methylene blue passed through the internal ear and internal auditory meatus; and at a subsequent examination, when the skull cap had been removed, the methylene blue was found, in every case, in the cisterna interpeduncularis, extending to the optic chiasma, and backwards around the crura to the interval between tentorium and cerebellum, but no blue was present in the cisterna magna nor in the ventricles. And when the injection was made through the dura mater in front of the lateral sinus, to resemble infection by sinus phlebitis, the pigment was limited to the under surface and posterior aspect of the cerebellum, extending to the incisura posterior and the cisterna magna. A series of other tests led to the conclusion that repeated lumbar puncture during life did not increase the area of suppuration, and that lumbar puncture was inefficient as a method of drainage.

The research also seemed to justify the following conclusions:—

1. When the cisterna interpeduncularis or cisterna magna contained pus, efficient drainage was difficult. Hence to save life, early diagnosis was most important. An infection through sinus phlebitis gave an idea of a better prognosis than when through the internal ear.
2. When meningitis arose through the labyrinth, drainage and suction by a syringe through the internal auditory meatus was most likely to be successful.
3. If meningitis arose from sinus phlebitis, drainage and suction should be established both behind and in front of the lateral sinus; here an occipito-altantal puncture might be useful.
4. Lumbar puncture was not a satisfactory drain for pus. It had been shown by experiment that if a bacteriæmia was produced by the intravenous inoculation of *B. lactis aerogenes* or other organisms in animals a fatal meningitis was established by lumbar puncture or by the withdrawal of cerebro-spinal fluid; but meningitis did not occur in those septicæmic animals from which cerebro-spinal fluid was not withdrawn. This work suggested that G. J. Jenkins was right when he said that the smallest quantity of cerebro-spinal fluid necessary for diagnosis should be withdrawn.

Mr. J. F. O'MALLEY asked what set of symptoms would induce Mr. Davis to open direct through the labyrinth, or to put a drain in the wall of the antrum, in front of the lateral sinus.

Mr. T. B. LAYTON said this contribution seemed to show that lumbar puncture should only be done after due care and consideration, as it was not wholly free from danger.

The PRESIDENT said the importance of this subject lay in the fact that the treatment of such cases was a matter of life and death. He had known sudden death occur from lumbar puncture. A vital point was whether organisms were present in the cerebro-spinal fluid or not. Sometimes he had found that the milky condition of the fluid was due simply to the presence of cells, not micro-organisms. If no organisms were in the cerebro-spinal fluid, the patient would very probably recover. There was no doubt that the only treatment of these cases was by operation; but it should be done, if possible, within a short time of what appeared to be the onset of the meningitis. The usual hospital experience, however, was that cases were seen too late. He did not agree that occipito-atlantal puncture should replace drainage. The important requirement was some means of reducing the pressure of fluid in the great cerebellar cistern.

Mr. DAVIS, in reply, said occipito-atlantal puncture was now frequently done in America, particularly for spinal tumours, and he thought it might be useful instead of Haynes's operation. When it was considered that a patient had meningitis arising from labyrinthitis drainage should be done through the internal auditory meatus and the labyrinth.

Complete Deafness after a Fall.

Sir JAMES DUNDAS-GRANT showed a man, aged 48, who 3½ years ago became quite deaf after falling on to his feet from a height of 6 ft. He did not strike his head, but during several days he had pain in his neck. During the night he had diarrhœa and vomiting and next morning he was deaf. The tests which were carried out suggested concussion of both labyrinths. A variation in symptoms showed there was a functional element in the case. He also showed a patient, a lady aged 29, whose deafness was much increased by a fall.

Mr. F. J. CLEMINSON related a case in which a man, when sleeping in the saloon of a steamer, was struck on the head by a large slab of marble, producing not only traumatic neurasthenia, but also considerable deafness in both ears, which the tests seemed to show was nerve deafness.

Mr. O'MALLEY referred to a case he had of sudden deafness without a precedent injury. He had her vestibular reaction tested, and there was a good response. He could not understand how the deafness had occurred. He thought the second patient of Sir James Dundas-Grant had otosclerosis.

Mr. DAVIS said that during the war he saw several cases of injury—by bullet or shrapnel—in the region of the mastoid process. They never made any recovery, but remained very deaf. The ordinary concussion case, such as that due to a cab injury, resulting in deafness, did have improvement of hearing. If hearing in any case did not improve in six weeks, he concluded that deafness was permanent, and he asked whether that was the general view.

Sir JAMES DUNDAS-GRANT, in reply, pointed out that a heavy fall on the feet sometimes caused a fracture at the base of the skull. And such a fall might damage such a delicate organ as the ear even if the force was not sufficient to fracture the skull. In some of the mastoid cases he thought there was a fracture of the internal ear, or it might be so violently disturbed that it became thereafter peculiarly sensitive and might be completely destroyed by hæmorrhage into it. He agreed that if no improvement of hearing occurred in six months something more than mere concussion was present.

ROYAL ACADEMY OF MEDICINE IN IRELAND.

SURGICAL SECTION.

A MEETING of this section was held on April 27th at the Royal College of Surgeons in Ireland, Sir WILLIAM WHEELER in the chair.

Exhibition of Cases and Specimens.

Mr. A. K. HENRY showed a needle for ligature of the middle meningeal artery in gasserian operations.—Mr. A. A. MCCONNELL said that he had used this needle, and he thought it an extremely useful instrument.

Mr. R. A. STONEY showed a urinary calculus from a man aged 33, who had had pain in his back for about three years. At the beginning of the attack for which he came into hospital, he had hæmaturia, lasting for about ten days. X rays showed a large dense shadow in the renal area; a second X ray showed the same shadow. Pyelo-lithotomy was performed and the pelvis sutured. There was practically no discharge from the wound, but on the fourth day a considerable amount of blood was present in the urine. This lasted for about a week and then cleared up. After three weeks the patient left hospital and had since remained perfectly well.

The PRESIDENT showed a specimen (with X ray photographs) of total gastrectomy for precancerous ulcer of the stomach. The patient was a woman, aged 60, who had a history pointing to a gross gastric lesion for about 14 months. A gastric ulcer was tentatively diagnosed, but was not definitely confirmed

after X ray examination. On opening the abdomen a deeply excavated ulcer, about the size of a shilling, was discovered on the posterior wall at the cardiac end. The edges were raised and hard, and the glands around the lesser curvature were enlarged. The age of the patient, the induration of the ulcer, and the nature of the glands suggested that malignant change had taken place, and, in any event, it was felt that such an ulcer in an elderly woman should be considered precancerous. Total gastrectomy was performed and Sir William Wheeler pointed out the use of De Martel's clamps in overcoming the technical difficulties of the operation. Microscopical sections showed no evidence that any malignant change had yet taken place. The patient made an admirable recovery and now prefers solid to liquid food.

Dr. T. G. HARDMAN, who had X rayed this patient, showed films. When an opaque meal was given to the patient a very definite filling effect was shown on the lesser curvature in the recumbent position, but was not present when the patient was in the upright position. Consequently a tentative and not an absolute diagnosis of ulcer was made.

Mr. H. STOKES did not think the President could have done anything but total gastrectomy in this case and Mr. W. PEARSON agreed with this opinion.

Dr. H. B. GOULDING asked how long it was since the operation had been performed and whether the patient was losing or gaining weight.

Mr. C. J. MACAULEY said he thought unless one was absolutely convinced that the ulcer was malignant it was too radical to take out the whole stomach.

The PRESIDENT briefly replied.

Mr. MCCONNELL described the technique of colopexy.

Miss K. PORTLEY reported a case of

Ascaris Appendicitis.

The patient, a boy, was admitted as a case of acute appendicitis. At operation the mesentery of the ileo-cæcal junction was studded with tubercles with a slight amount of pus in the right iliac fossa. A worm about six inches in length, of the *Ascaris lumbricoides* type, was found free in the peritoneal cavity. The ascaris had apparently made its exit from the alimentary canal by perforating the tip of the appendix. Miss Portley reviewed the literature of appendicitis arising from infection parasites, and stated that she could find no mention of the ascaris.

Mr. W. DOOLIN read a paper on

Intestinal Occlusion in Tuberculous Peritonitis.

A young motor mechanic was admitted to St. Vincent's with symptoms suggestive of subacute sigmoid obstruction. Laparotomy disclosed widespread miliary peritoneal tuberculosis of the adhesive type, too extensive to warrant resection of the ileo-cæcal segment, which was apparently the primary focus of the disease. After a period of seven weeks' post-operative X ray therapy the patient was sufficiently recovered to leave hospital for sanatorium treatment. Prognosis in this type of case might be looked on as serious. The simulation of the "acute abdomen" by acute peritoneal tuberculosis was rare, though a few references were to be found in French and American surgical literature.

SECTION OF PATHOLOGY.

A meeting of this section was held on April 20th, Dr. W. D. O'KELLY, the President, was in the chair.

Dr. W. BOXWELL described a case of

Brain Sarcoma.

The patient, a boy 4½ years, was admitted to hospital suffering from convulsions. He recovered after a hot bath, but a later attack had to be treated with chloroform. Previous to the convulsions he had been lively, talkative, and precocious. While in hospital he vomited solid food, and had severe headaches. He answered questions intelligently, but his cerebration and reaction time were slow. Pulse 90, B.P. 80, T. normal. The cerebro-spinal fluid was under considerable pressure, but contained no cells. He died after eight weeks in hospital, having become blind before his death. The brain showed an extensive cellular infiltration extending under the pia; this consisted of round cells apparently sarcomatous; he believed that he could trace their origin from the choroid plexus of the fourth ventricle.

Mr. T. T. O'FARRELL could see no connexion between the small tumour in the roof of the fourth ventricle and the main tumour; he asked whether the question of chloroma had been considered.—Dr. J. T. WIGHAM said that the tumour might easily be endothelial in origin, although the cells were like those of a round-cell sarcoma.—Dr. BOXWELL, in reply, said that the tumour was perfectly white in colour.

Sir JOHN MOORE read notes on

Two Cases with Unusual Sequelæ.

The first was a case of pneumonia in a girl, aged 18, admitted to hospital on Jan. 1st after five weeks' illness from what was stated to be pneumonia. She was thin and pale, had a persistent cough, and abundant sputum. The sputum was examined three times for tubercle bacilli with negative results; a Widal test was also negative. An exploratory puncture in the dull area over the base of the left lung was made twice, but without tapping any collection of fluid. The liver was greatly enlarged. Towards the end of January the patient's condition became critical. The lower limbs became anasarcous, and severe pain set in in the right thigh, apparently due to thrombosis, which finally extended up to the inferior vena cava. The breath and sputum were fœtid. On Feb. 20th a pleural friction rub was detected over the base of the right lung. Temperature became subnormal on the 24th and remained so till death on the 27th. Post-mortem findings were: abscesses in liver, spleen, left perinephric region, and lower lobe left lung. Œsophagus, liver, left lung, left kidney, all adherent to diaphragm. Pus from the liver abscess contained long chains of streptococci. Tubercles were found in the liver, which was extensively infiltrated with fat.

The second patient, a woman aged 56, was admitted to hospital on March 3rd, extremely emaciated, and wearing a look of great physical suffering. She had had for nearly a year gnawing pains over the upper part of the abdomen, which was very tender on pressure. She was also suffering from loss of appetite, vomiting, and constipation. She was losing flesh rapidly, and during the first nine days in hospital she lost 2 lb. Any attempt to take food brought on sickness, and she vomited frothy stuff, and on two occasions blood. Her pulse-rate was persistently quick—100 to 120, respirations 24 to 26, and temperature usually subnormal. On examination a tumour in the lower part of the epigastrium near the middle line was found, and enlargement with hardness of the inguinal glands. A diagnosis of carcinoma of the stomach was made, and the case was pronounced to be inoperable; a screen examination confirmed the diagnosis. The patient lived until March 25th, when she collapsed suddenly and died quickly of hæmorrhage into the stomach. Post-mortem findings: When the peritoneal cavity was opened, there was an escape of a large quantity of clear, straw-coloured fluid. The falciform ligament was greatly thickened, and was hard and nodular. The gall-bladder was adherent to the duodenum. The pyloric end of the stomach was firmly bound down by dense adhesions. The spleen was closely adherent to the greater curvature of the stomach. The peritoneum had a number of nodules scattered over it, and there were several enlarged, hard glands in the meso-colon. The liver was rather small, but showed no secondary nodules. The stomach was small; the wall was hard and thickened. When opened, the stomach was found to be full of blood. In the posterior wall, near the pylorus, was a large crater-like ulcer, with a fungating growth in the centre of it. The diaphragm was studded throughout with secondary growths, some of which were the size of a shilling.

Dr. BAREND VIVIER demonstrated the specimens. There were two abscesses in the first case, one in the liver and the other in the base of the left lung penetrating the diaphragm and involving the spleen and left kidney.

Dr. O'FARRELL said that he would like to ask what the origin of the sepsis in the first case was, and if a blood culture had been taken. He would also like to know if the œsophagus was quite normal. Sometimes foreign bodies were found in the œsophagus, and gave rise to conditions like those described. It would be interesting to know what the source of infection in this case was, and if it was a primary focus.

The PRESIDENT said that, regarding the first case, he was satisfied that there was no tuberculous lesion in the lungs, and he was inclined to think that this

was not an ordinary case of tuberculosis, on account of the absence of tubercle bacilli in the sputum, but that the tubercles in the liver were a subsidiary chance infection. The second case was extremely interesting. He thought that hæmorrhage in such a case was uncommon. The freedom of the liver from any growth was a point of importance.

Mr. HENRY STOKES said that, regarding the first case, before the needle was put into the patient's chest she was X rayed. There was at that time no pleural effusion, and, according to the X rays, any abscess must have been small. It had certainly not penetrated the diaphragm.

Sir JOHN MOORE, in replying, said that in the first case no blood culture had been made. He had not looked for any evidence of actinomycosis. He was of opinion that this was really originally a case of pneumonia, and that the infection took its origin in a very seriously damaged left lung. Regarding the second case, he looked upon it as undoubtedly one of ulceration of the stomach, and he thought that this accounted for the illness up to a comparatively short time before death. The fact that cancer of the stomach might supervene on an ulcer was demonstrated in this case.

Dr. O'FARRELL read notes on cases of cylindroma of parotid region, adenosarcoma of kidney, and basal cell cancer of neck.

Reviews and Notices of Books.

CLINICAL PATHOLOGY.

Clinical Laboratory Diagnosis. By ROGER SYLVESTER MORRIS, A.B., M.D., Professor of Medicine in the University of Cincinnati. London and New York: D. Appleton and Co. 1923. Pp. 456. 25*s*.

THIS book is designed to bring under one cover all the laboratory methods which may be of use in the investigation of cases. In the compiling of such a manual the author is faced, first, with the problem of the arrangement of his matter, and then with that of selection and rejection among the multifarious procedures of clinical pathology, bacteriology, and chemistry. The matter of the present volume is arranged under nine heads—Fæces, Blood, Urine, and so forth—each dealing with one particular sort of material for examination. This arrangement makes for ease in the location of any desired procedure, but is purely arbitrary and tends to result in a sacrifice of a proper understanding of the principles underlying any particular line of investigation to a certain rule-of-thumb facility. In his solution of the problem of what to omit and what to include the author has for the most part shown judgment, but some method of estimating renal function in addition to the phthalein test of Rowntree and Geraghty might well have found a place; and it is surprising to find no reference to the fat-fatty acid ratio in the fæces as a help in the diagnosis of pancreatic disease. Space might well have been saved by the omission of details of a number of procedures of doubtful value. Ehrlich's diazo-test, for instance, has not much place in modern medicine, and in the present state of knowledge little useful clinical information can be derived from the estimation of the cholesterol, fatty acids, or amino-acids of the blood. Details of the technique of these procedures have no place in a clinical manual. In the section on blood no satisfactory criteria are given for the differentiation of large lymphocytes, large "mononuclears" and "transitionals"; as such do not exist, this is hardly surprising, but the author might have saved the conscientious student a lot of worry by saying so. The sections on parasitology are full and contain much useful matter. The chemistry of the blood is dealt with by Drs. Raphael Isaacs and David S. Hachen. Ample details of the technique of all the procedures described are given. An excellent feature of the book is the multiplicity of references—a less satisfactory one is that few of the illustrations are original.

Clinical Laboratory Methods. By RUSSELL LANDRAM HADEN, M.A., M.D., Associate Professor of Medicine, University of Kansas, School of Medicine, Kansas City, Kansas. London: Henry Kimpton. 1923. Pp. 294. 18*s*.

THIS volume covers the whole range of clinical laboratory technique. The author aims at providing well-tried methods; and, where possible, he reduces the procedure to a single test; with the result that, for the ground covered, a valuable volume has been produced in the minimum of space. The one disadvantage to readers here is that the methods recommended may not be those which, by common use, have become well established in this country. The usual routine of laboratory work, both pathological and bacteriological, has been included, and of the tests recommended both the procedure and the preparation of the necessary solutions are given together. The book contains an account of new work in biochemistry and the section on the quantitative chemical examination of the blood is very complete in this respect. A special feature is the chapter on Miscellaneous Clinical Pathological Examinations, and that on Chemical Procedures and Solutions; dealing among other things, with the use of the colorimeter and nephelometer, the preparation of volumetric solutions, the calibration of volumetric apparatus, and the colorimetric determination of the H-ion concentration of biological fluids. While it is probable that the clinical value of some of the elaborate technique recommended has yet to be established, Dr. Haden has nevertheless compiled a comprehensive and practical volume appealing both to the advanced student and the beginner in laboratory work.

The volume is of a convenient laboratory size and is well printed; illustrating the text are fine colour plates and 69 photographs and diagrams.

THE PIRQUET SYSTEM OF INFANT FEEDING.

Die Ernährung gesunder und kranker Kinder. By Dr. EDMUND NOBEL, Universitäts-Kinderklinik, Vienna. Vienna, Leipzig, Münich: Rikola. 1923. Pp. 74.

ALTHOUGH the Pirquet system of infant feeding upon which this book is based has gained few adherents in this country, yet Dr. Nobel has much to say that is of more than local interest. The book is divided into two parts, dealing respectively with theory and practice. In the first the principles of the nem system—the word *nem*, denoting 1 g. of standard breast-milk, being formed from the initial letters of the three words Nahrungs-Einheit-Milch—are set out with conspicuous clearness. Some of the points upon which stress is laid are those emphasised by our own pædiatrists, such as the need of absolute regularity in feeding and the regulation of the quantity of food according to the size and weight of the infant. The estimation of the exact quantity of food needed in a given case is obtained by Pirquet's pelidisi formula (*pelidisi* being derived from pondus decies lineare divisum sedentis altitudine), which is expressed as the cube root of ten times the weight divided by the sitting height, and in a normally developed infant is of the value of 100. The case for the Pirquet system, with its rather forbidding nomenclature, is well set out; but the system suffers from at least two serious defects. First, the inadequate recognition accorded to the temperamental factor—an active, lively baby obviously needs more nourishment than a phlegmatic infant, even where the pelidisi index is the same. Secondly, save that the optimum protein-percentage is stated to be one-tenth of the total nem value, as is the case in breast-milk, and that a fat content in the diet amounting to at least 10 per cent. of the total food value is recommended, the question of balance in the food elements is practically ignored. After

careful study of the book it is still difficult to see in what respects the Pirquet system is an improvement upon the simpler calorie system.

The practical section of the book will have more interest for English readers. After a few remarks on the food requirements of the pregnant and nursing woman, Dr. Nobel details an excellent scheme for the feeding of healthy children from the first day of life until the end of the first year, the scheme being drawn up on the lines followed at the Kinderklinik in Vienna. For the first two weeks six to seven breast-feeds are given at three-hourly intervals during the 24 hours, the 3 A.M. feed being dropped after the third week. During the fifth month the child learns to drink from a spoon, a feed of milk broth being substituted for the mid-day breast-feed, while in the sixth month two such feeds are given. During the second half-year the child gradually learns to eat vegetables, stewed fruit, and biscuits, in addition to the four breast-feeds which are given daily till the end of the ninth month. Where, in the case of artificial feeding the quality of the cows' milk leaves something to be desired, the daily administration of lemon juice, and, in winter, of a small quantity of cod-liver oil, is recommended, emphasis being laid throughout on the value of the accessory factors in the diet. A number of useful recipes for preparing vegetable and other broths are given. The final chapters of the book are devoted to a discussion of the nourishment of sick children and to various arithmetical calculations.

Dr. Nobel's book is interesting and well written, and will repay careful study.

OPHTHALMOLOGY.

Diseases of the Eye. Fourth edition. By Sir JOHN HERBERT PARSONS, C.B.E., D.Sc., F.R.C.S., F.R.S., Ophthalmic Surgeon, University College Hospital; Surgeon, Royal London (Moorfields) Hospital. London: J. and A. Churchill. 1923. With 21 plates and 326 text-figures. Pp. 660. 19*s.*

THIS is emphatically a student's text-book, covering the whole ground of ophthalmology with no superfluous matter. It differs from larger text-books such as that of Fuchs in omitting all reference to some of the rarer diseases of the eye and in cutting down discussion of the subjects dealt with to what the author considers essential. It is therefore necessarily somewhat dogmatic, but this, from the student's point of view, is advantageous. To have mastered the contents of this book is to have been in close contact with a first-rate teacher and ophthalmologist, and even if the future ophthalmic surgeon finds occasion to modify the knowledge gained from it in particular points, he will certainly never regret having pinned his faith to it as a sound foundation on which to build. We would especially pick out for commendation the chapters on diseases of the fundus oculi. The varieties of fundus disease actually seen in the out-patient room are so many that the student deserves rather more information about them than he is vouchsafed in most text-books, and here he gets it, though we are sure that the author himself would be the last to claim that it is anything like exhaustive.

The diagrams and plates illustrating both the ophthalmoscopic appearances and the pathology of different forms of retinitis may be specially commended. The disease generally called "retinitis pigmentosa" is characterised by the author as "an extremely chronic, progressive degeneration of the choroid in both eyes." In this description he differs from the older authorities, and other points might be cited in which all might not agree with him—for instance, his advocacy of tenotomy in small degrees of squint and the somewhat half-hearted way in which he mentions antisyphilitic remedies in the treatment of interstitial keratitis. A feature quite new in this edition is a short section on preventive ophthalmology. In the chapter on the causes and prevention of blindness large use is made of Mr. Bishop Harman's evidence before the Advisory Committee on the Welfare of the Blind. Under the heading "Hygiene of Vision," the subject of illumination is discussed.

That this edition will maintain the popularity of this book need not be doubted.

Text-book of Ophthalmology. By HOFRAT ERNST FUCHS, formerly Professor of Ophthalmology in the University of Vienna. Authorised translation from the twelfth German edition. By ALEXANDER DUANE, M.D., Surgeon Emeritus, Knapp Memorial Hospital, New York. Seventh edition, revised and reset. London and Philadelphia: J. B. Lippincott Company. 1923. With 455 illustrations. Pp. 997. 42*s.*

To the majority of English-speaking students of ophthalmology this is probably still the best-known text-book of the subject on a large scale that exists, though in recent years it has had to compete with others of a similar size. In previous English editions of the Fuchs text-book the translator and editor has modestly kept his own supplementary contributions confined within brackets. In the present edition he has not only done away with the brackets, but by rearranging the whole of the subject-matter and rewriting a great part of it has produced what is practically a new book. In so doing, he tells us, he has had the benefit of consultation with Dr. Fuchs and of comparison with the thoroughly revised thirteenth German edition just prepared by Prof. Salzmann. He has, we think wisely, omitted a considerable amount of non-essential matter which appeared in former editions, so that in spite of a great deal that is new the total bulk of the new volume is less by 70 pages than that of the sixth edition. As an instance of omission we may mention the explanations of the Young-Helmholtz and the Hering theories of colour vision, which no longer appear, while the additions to the text are far too numerous to mention. One of the most important is a fuller treatment of the perimetry of glaucoma. Even the chapter on motor anomalies of the eye, which in the sixth edition was largely the work of the translator, has been re-written. The sections on the anatomy of the eye are now grouped together so as to form the initial part of the book. The final part on the operative surgery of the eye is kept nearer to its previous form than most other portions of the book, though it is not without additions, as, for instance, a reference to epithelial inlays for contracted socket and outlays for lid operations, and a diagrammatic representation of the area laid bare by the conjunctivo-corneal flap of Elliot in his trephining operation. As, however, the descriptions of various operations are necessarily abridged it would add to the value of the book were references given to fuller accounts of some of them.

As a whole this new edition of a great work embodies a noble effort to retain its place as the premier text-book of ophthalmology.

PRACTICAL APPLICATIONS OF X RAYS.

By G. W. C. KAYE, O.B.E., M.A., D.Sc., A.R.C.Sc., F.Inst.P., Head of the Radiology Department, the National Physical Laboratory; President of the Rontgen Society. London: Chapman and Hall, Ltd. Pp. 135. 10*s.* 6*d.*

THIS book is based largely on a course of Cantor lectures delivered by the author before the Royal Society of Arts in 1921. Its main concern is with the practical uses of X rays. The first 72 pages are devoted to a succinct account of X rays and their physical properties, the different types of X ray tubes in current practice, the apparatus required for their excitation, and the methods used for measuring the wave-lengths and the intensities of beams of X rays. There is then a chapter of six pages upon the medical applications of X rays, followed by an account of some of the industrial uses to which the rays have been put. The most important of these may perhaps be said to be the examination of materials for the purpose of revealing flaws in structure and in

handiwork, notably in metals and timber, especially aeroplane parts, and in the detection of the work of the impostor in works of art. The volume is completed by three appendices, one on the report of the X Ray and Radium Protection Committee, one on X ray and electro-medical nomenclature, and one on atomic numbers.

The book is well illustrated by a number of line drawings and reproductions from original radiographs.

PRACTICAL PHYSICS.

By J. A. CROWTHER, Sc.D., F.Inst.P., sometime Fellow of St. John's College, Cambridge; Demonstrator of Physics in the Cavendish Laboratory; University Lecturer in Physics as applied to Medical Radiology, Cambridge. Oxford Medical Publications. London: Henry Frowde and Hodder and Stoughton. 1923. Pp. 260. 10*s.* 6*d.*

THIS book on practical physics follows the general scope of the well-known Manual of Physics by the same author, and maintains the standard which this book has set in mode of presentation and in the help which it affords to the student in the more difficult parts of the subject. Dr. Crowther's foreword to the student, beginning with "To err is human," should do something towards reconciling the latter to the methods of exact measurement which are the main substance of the book. The scope of the subject is conditioned by the scope of the syllabus for the first medical examination, and however desirable it may be for the student to get familiar experimentally with forms of radiation other than light and heat, it is hardly justifiable for teachers to introduce the matter into their first medical courses. Probably Dr. Crowther has omitted these subjects for this reason.

If it be granted, and there are some teachers who will dissent, that text-books are required for the practical work entailed in a course of elementary physics, then it will be agreed that Dr. Crowther's book is likely to serve this purpose well. It is well illustrated by good line drawings, which enhance its value.

THE HOME AND HEALTH IN INDIA AND THE TROPICAL COLONIES.

By KATE PLATT, M.D., B.S. Lond., formerly Principal, Lady Hardinge Medical College and Hospital for Women, Delhi, India. London: Baillière, Tindall and Cox. 1923. Pp. 216. 5*s.*

A PLEASANTLY discoursive little book, which will be appreciated by all women about to make their home in India. Dr. Platt has had the advantage of long residence in various parts of India in a capacity of teacher and medical adviser, and is thus in a position to supply information, friendly caution, and reassurance where these are most needed. Part I., entitled Making the Home, will be found of especial value, as though Parts II. and III., which are headed About the Nursery and Tropical Diseases, respectively, are readable enough, they deal sketchily and somewhat dogmatically with a great variety of topics, some of which cannot properly be disposed of in a few lines. Too little stress is laid on the need for ante-natal care and supervision, a subject which might well be developed in future editions.

Dr. Platt's book contains sound common-sense and should do much to encourage those women setting out to begin life under new conditions.

JOURNALS.

BRAIN. Vol. XLV., Parts 3 and 4.—Two Cases of Syringomyelia and Syringobulbia, Observed Clinically over Many Years and Examined Pathologically, by James Taylor, J. G. Greenfield, and J. P. Martin. Of the two cases recorded one had been observed continuously for 24 and the other for 19 years. The clinical course of the two cases was entirely different; in the one, the symptoms showed no change from the time the man first came under observation, while in the other the disease was throughout steadily progressive. Post mortem, the most striking contrast was the inverse relationship of the cavitation to the process of gliosis. In the first case there was much more gliosis than cavitation, and it is suggested that the fluid within the cord had formed a channel by which it could escape into the subarachnoid space, and that the formation of this channel coincided with the arrest in the progress of the disease. More important than the increase of fluid within the cord as an ætiological factor may be a congenital instability of the glial tissue in the regions which the central canal of the cord occupies during fœtal life.—A Study of the Cerebral Fibre Systems by means of a New Modification of Anatomical Methods; The Lateral Wall of the Thalamus and the Sagittal Portion of its Cerebral Fibre System, by Joshua Rosett. The author is of the opinion that careful dissection of properly hardened tissue, although the oldest, still remains one of the best methods at the disposal of the anatomist. His new method consists of two processes: (1) longitudinal sectioning; and (2) serial dissections. By the former it is possible to produce longitudinal sections of strands of tissue 10 cm. long, 3 or 4 mm. in width, and less than 1 mm. in thickness. The course of the fibre tracts may thus be observed in the two possible directions on a plane surface, the third direction may be supplied by serial dissections. In these, after the tissue has been hardened it is dissected and a record of each step in the dissection is obtained by pouring on the preparation molten wax, which furnishes a mould into which is poured plaster of Paris. The lateral wall of the thalamus has been examined by these methods, and the author correlates his findings with those of previous anatomists.—A New Conception of the Elements of Sensation, by John S. B. Stopford. Fifty-one patients were examined in whom it was known that a complete division of definite peripheral nerves of the upper extremity existed. The author holds that in the past anatomists have designated nerves as purely cutaneous on insufficient evidence, and therefore it would appear that any division of sensation into cutaneous and deep must be regarded as artificial, and apt to be misleading when applied to clinical work. He finds that the various forms of sensation included under the division of deep sensibility may be dissociated; and that therefore deep sensibility ought to have been subdivided, just as cutaneous sensation has been divided, into epicritic and protopathic. Contrary to the general belief that the earlier return of protopathic sensibility is dependent upon a more rapid rate of regeneration in protopathic than epicritic fibres, the author holds that it is more reasonable to expect to find an explanation of the two stages of recovery in the central nervous system, rather than to find it due to a different rate of regeneration of two sets of fibres which anatomically appear to be identical. The fact that the forms of sensation appearing late are those which Head has proved to have cortical representation is significant.—Toxic Polyneuritis, by Wilfred Harris. A comprehensive review of the less common forms of toxic polyneuritis, including leukæmic, relapsing, and hæmatoporphyrinuric.—On Muscle Tonus, by J. W. Langelaan. This paper gives the results observed in frogs after: (1) the seventh, eighth, and ninth rami communicantes were divided on the right side; (2) the same posterior roots were cut; (3) the spinal cord had been divided between the second and third spinal roots, with subsequent section of the seventh, eighth, and ninth rami communicantes; (4) the spinal cord was only partially cut, and a new scheme of the primary spinal reflex arcs based upon these results is suggested.—The Central Connection of the Vestibular Nuclei with the Corpus Striatum, and their Significance for Ocular Movements and for Locomotion, by L. J. J. Muskens. On experimental evidence the author believes that the tertiary vestibular tracts terminate in the oral part of the globus pallidus and that the secondary vestibular tracts which ascend in the posterior longitudinal bundles cross the middle line by way of the posterior commissure before entering the commissural nuclei.

THE LANCET.

LONDON: SATURDAY, MAY 12, 1923.

THE MENTAL TREATMENT BILL.

SINCE the repeated reference, in an open letter[1] to visiting committees of mental hospitals from the chairman of the Board of Control, Sir FREDERICK WILLIS, to an impending Mental Treatment Bill, its formal introduction has been awaited with interest. Lord ONSLOW moved the second reading of the Bill in the House of Lords on May 3rd in a forcible address which left no doubt as to the main point on which new legislation is required. The chief purpose of the Bill is to provide that a patient suffering from incipient mental disorder may be received in recognised public or private institutions for treatment without the stigma of certification. The present provision for voluntary boarders in private licensed houses does not meet the whole need, for not only is such treatment beyond the reach of the poor, but it cannot be applied to those sufferers from incipient mental disease who may be incapable of volition just at a time when their immediate removal to an institution might very well be the only treatment likely to effect a permanent cure. The safeguards to prevent abuse of the new powers are well planned. The recommendation of two doctors—one at least being a medical man approved by the Board of Control—must be countersigned by a justice of the peace or a minister of religion, personally acquainted with the patient, who is satisfied that the patient is incapable of voluntary action at the time. The limitation of uncertified treatment to a maximum period of one year in all is another wise provision. If one year's treatment does not avail it is probable that certification would in any case be inevitable.

There will be three ways of egress for the uncertified patient from an institution to which he may have been sent when incapable of understanding his position: (1) he may leave the institution at any time on giving 48 hours' notice; he may be discharged (2) by the superintendent or (3) by the Board of Control, which will frequently inspect institutions housing uncertified patients. The mechanism of the scheme is elastic. County and borough councils, acting through their visiting committees, will be able to receive patients into their own institutions or may arrange for general hospitals to receive early mental cases. The advantages of this latter provision include, from the patients' point of view, separation of non-certified from certified patients, and access to special facilities for diagnosis and treatment of physical disease; and from the communal aspect, the educational value to medical students and nurses of the study of border-line cases. Out-patient departments, where cases of nervous or of mental disease will not obviously be differentiated, are to be allowed, and many relatives doubtless will take advantage of this method of procuring early medical advice without upsetting the patient. Adequate provision for after-care will now be part of the business of visiting committees, while opportunity will be given for more lavish expenditure of public money on coördinated research. The constitution of the visiting committees will be strengthened by the power to coöpt expert opinion among their members and also to obtain the services of men or women, not necessarily members of the county or borough council, who may have leisure and a desire to devote it to visiting the insane.

There remains only the question of adequate central control. The existing staff of Commissioners in Lunacy, of which six only as doctors or lawyers are in a position to pay statutory visits, cannot cope with its present work, let alone the inevitable extra burdens of inspection that this Bill must carry with it. It is suggested that instead of still further increasing the number of Commissioners, whose salaries are £1200 to £1500, an increase in the number of medical inspectors, at £500 to £800, would be a more economical and practical method of achieving proper supervision, and in the future it will be permissible for certain visits and local work to be carried out by inspectors. Lord ONSLOW's Bill should meet with little criticism as to its essential points, and its embodiment in our statutes may well prove a landmark in the development of the therapeutics of mental disease.

[1] See THE LANCET, 1923, i., 350.

A NEW THEORY OF COAL-MINERS' NYSTAGMUS.

WE have received an advance copy of a paper by Dr. FREDERICK ROBSON on miners' nystagmus, the first half of which was read at Cardiff on March 22nd before the South Wales Institute of Engineers, followed by a discussion in which many medical men took part, and the second half read at Swansea on April 27th. In it the author propounds a new theory of the causation of the disease, which, if true, would entirely upset the conclusion arrived at two years ago by the Nystagmus Committee of the Medical Research Council, supported by the opinion of most of the medical men who gave evidence and had practical experience of the subject—viz., that the chief factor in its causation is deficient lighting. Dr. ROBSON'S theory is that the main cause of miners' nystagmus is the emanation of noxious gases from recently cut coal. His argument is that nystagmus may be due to anoxæmia, that carbon monoxide can produce anoxæmia, that carbon monoxide is present as a constituent of occluded gases in highly volatile coals, and therefore nystagmus may be due to carbon monoxide. In support of this theory the paper attempts to establish, with considerable success, a relation between the prevalence of nystagmus and the percentage proportion of volatile matter found in coals. Taking the South Wales coal-field there is a progressive diminution in the volatile matter from east to west, and there is a corresponding decrease in the percentage of men employed below ground who were reported as suffering from nystagmus. The figures are at first sight remarkable, and as they are the main support of Dr. ROBSON's argument, we think it worth while to give them in full.

Nystagmus in Men Employed below Ground, from 1909–1919.

		Volatile (per cent.).		Nystagmus (per cent.).
1.	Monmouthshire ..	29·50	gave	4·57
2.	Glamorgan East ..	21·19	„	2·22
3.	Glamorgan West ..	15·50	„	1·90
4.	Carmarthen	11·87	„	1·15

The argument is amplified at considerable length by reference to the special conditions peculiar to each district. The obvious criticism of it is that in the volatile pits the lighting is inferior owing to the

danger of using naked lamps, whereas in the non-volatile pits the lighting is superior. Dr. ROBSON'S answer to this is contained in Part V. of his paper (read at Swansea subsequently to the discussion at Cardiff), in which he brings figures to show that, in spite of the introduction of electric lamps into the mines, which has gradually been effected since 1914, but is still far from complete, the compensation claims for nystagmus have continued to increase, but he admits that the new lamps may not have been in use long enough to indicate the results in figures.

The discussion that took place at Cardiff after the reading of the first part of the paper shows that as yet, at any rate, Dr. ROBSON'S conclusions find little support among those best able to judge. Prof. GEORGE KNOX indeed opined that the evidence that deficient lighting is the chief cause of nystagmus was not so convincing that any body of men could afford to neglect to explore every other possible avenue that might lead to definite conclusions, and Dr. LEIGHTON DAVIES leant decidedly to Dr. ROBSON'S theory. On the other hand, Dr. J. S. HALDANE, who himself discovered 25 years ago that small amounts of CO are formed at ordinary temperatures when air acts upon fresh coal, stated that the quantity is so minute that we can have complete confidence in dismissing this gas as a possible contributory cause of miners' nystagmus. As chairman of the Nystagmus Committee of the Medical Research Council, he thought it would be a misfortune to British coal-mining if, owing to the idea that nystagmus is possibly due to mine gases, effort is relaxed towards obtaining greatly superior illumination for coal-miners. Dr. T. LISTER LLEWELLYN, on whose evidence the report of the committee was very largely based, took a similar view, and so did Dr. J. J. HEALY, who suggested an explanation for the phenomenon of nystagmus based on the theory of VON KRIES that the rods and cones of the retina provide two distinct apparatus for dark and light vision respectively. Perhaps the most telling criticism of Dr. ROBSON'S figures, however, referred to the effect of the Workmen's Compensation Act on the number of nystagmus cases officially reported. As Prof. E. L. COLLIS pointed out, experience teaches that several years always elapse after a disease is scheduled before claims reach a steady annual level. Nystagmus was placed in the schedule to the Workmen's Compensation Act of 1906. The fact that nystagmus frequently arises without causing any subjective symptoms, and therefore that many men whose eyes oscillate in the dark may be unconscious for years that anything is the matter with them, must necessarily have resulted in a steady increase in the number of claims for years after the law was first passed. In 1913, soon after the annual rate had reached a point where it might naturally have remained fairly steady, the designation of the disease in the schedule was altered, and altered in such a way as to admit for compensation for the first time psychopathic manifestations of the trouble. A rise in the number of cases naturally followed. War conditions and variations in the rate of wages have since introduced disturbing factors which make any statistics of the disease based on claims very largely unreliable. Moreover, a disease with psychopathic symptoms is "catching," so that a colliery or district previously free may suddenly be "infected" with compensation claims.

Whether these psychopathic symptoms—tremors, disordered action of the heart, headaches, sleeplessness—are in reality a separate entity which might be called "miners' neurosis," to be found either separate or combined with oscillations of the eyeball; or whether they are always secondary to the latter, and therefore parts of a syndrome of which the oscillations of the eyeball are only one part, is a matter on which there is room for differences of opinion and which ought to be further investigated. Certainly it is generally acknowledged that besides defective illumination, a factor in the disease is the constrained position of the eyes necessary for coal-hewers, a factor which Dr. A. S. PERCIVAL, of Newcastle-on-Tyne, following the late Dr. SNELL, considers to be of primary importance. The whole controversy is as yet some way from being settled. Meantime, however, we may say definitely that the arguments for the new theory are quite insufficient to afford excuse for any relaxation of the efforts which have for some years been made to provide the miners—in addition to safety lamps where necessary—with proper illumination from electric cap-lamps.

SPLANCHNIC ANÆSTHESIA.

THE administration of general anæsthetics has reached such a degree of perfection in this country that there has been but little inducement to develop local methods for abdominal operations. On the continent, where but few specialist anæsthetists exist, the bad effects of ill-administered ether or chloroform have been so pronounced that the search for a method by which general anæsthetics could be eliminated has gone on unceasingly. The latest advance in this direction has been the evolution of splanchnic anæsthesia. Whilst it has always been possible to open the abdomen under local anæsthesia painlessly, manipulation inside the cavity invariably causes distress. The visceral walls themselves are insensitive, but any interference with the mesentery or parietal peritoneum, even the withdrawal of an organ to the surface of the body, gives rise to considerable pain. The sensory nerves in question, for the whole of the abdomen above the pelvis, are derived from the cœliac plexus, which they reach along the splanchnic nerves. This plexus is rather deeply situated in front of the spine and very close to the aorta and vena cava. The suggestion to infiltrate this whole area by puncture from without does not commend itself easily to the anatomist or surgeon. But by the work, amongst others, of KAPPIS, BRAUN, WENDLING, LABAT, and PAUCHET three methods have been worked out. They are puncture from behind below the last rib, puncture from below the costal margin, the needle traversing the left lobe of the liver, and puncture above the lesser curvature of the stomach after opening the abdomen. The second procedure is the most dangerous, least certain, and an unsatisfactory way. Puncture after opening the abdomen is the safest and most easy, but it is not always possible and in itself is painful. It is best reserved as an accessory method, if after puncture from behind it is found, when the abdomen has been opened, that the anæsthesia is not complete. E. KUTSCHA-LISSBERG [1] reports his experience in 178 cases, which included most operations upon the abdomen outside the pelvis. The ages of the patients ranged from 10 to 70 years. In 169 cases the anæsthesia was absolute, but in 12 of these it was combined with lumbar anæsthesia; there were two complete failures; in only three patients was resort to general anæsthesia necessary, and one of them inhaled alcohol only. Preliminary treatment consisted in the

[1] Wien. Klin. Woch., 1923, No. 12, p. 216.

administration of morphine and atropine. Scopolamine appeared to cause abdominal rigidity. In this series there was only one death in which the anæsthetic could be said to play a part. It was a man with a ruptured colon who died during the operation. He was very collapsed from the injury before the administration of the anæsthetic.

What are the dangers and complications of splanchnic anæsthesia? They are these: Reflex collapse when the needle reaches the plexus, only seen when the patient is injected sitting up; toxic symptoms which come on immediately if the needle point should be in the cavity of the vena cava or aorta, or supervene in a few minutes if the patient be unusually susceptible to novocaine; and finally, acute dilatation of the stomach and perhaps atony of the intestine a few days after operation. The collapse from novocaine poisoning can be avoided by care in technique and avoidance of too large a dose. The dilatation of the stomach is a serious complication. It arises apparently from the upset of the cœliac plexus caused by the injection. The bad effects of it can be lessened by early recognition and the passage of a stomach tube. Many considerations come to the fore when the advisability of adopting the method has to be decided by English surgeons. The Teuton is a more phlegmatic individual and will submit readily to the number of needle punctures (14 or more) necessary to block both the splanchnics and the nerves of the abdominal wall. This in itself would be an ordeal for many patients in this country. The distress of being operated upon whilst conscious would be very great in some individuals. Yet it must be confessed that the comfort of the patients the day after operation under local anæsthesia is very striking. They escape the vomiting which even the most skilled general anæsthetist is unable always to prevent, and with it the exhaustion caused by the pain of uncontrolled retching, a memory always the last to fade from the mind of a laparotomised patient. Then again, it must be admitted that the toxæmia of novocaine is less than that due to a general anæsthetic. It is claimed that the mortality rate in peritonitis is less when the patients are operated upon under local anæsthesia than under ether. Probably with increasing experience it will be established that, like the spinal method, splanchnic anæsthesia has its indications as well as its limitations, and that it will come to take a recognised place in surgical technique.

THE annual oration of the Medical Society of London will be given at 11, Chandos-street, London, W. 1, next Monday, May 14th, by Dr. J. Walter Carr, who has taken as his subject Life and Problems in a Medical Utopia.

ROYAL SOCIETY OF MEDICINE.—The President, Sir William Hale-White, with the hon. secretaries, Dr. A. M. H. Gray and Mr. Girling Ball, and the secretary, Sir John Y. W. MacAlister, attended at St. James's Palace on May 4th, and formally presented the Honorary Fellowship of the Society to the Prince of Wales.

The house and library of the Royal Society of Medicine will be closed from Saturday, May 19th, to Monday, May 21st, both days inclusive.

ROYAL COLLEGE OF PHYSICIANS OF EDINBURGH.—At a meeting held on May 1st, Sir Robert Philip, President, being in the chair, Dr. George Henry Masson was elected to the Fellowship of the College, and Dr. James Davie Gilruth and Dr. William Arnott Dickson were admitted to the Membership of the College. The College re-elected Dr. William Russell as their representative on the General Council of Medical Education and Registration for a further period of five years. The Freeland Barbour Fellowship for Original Research was awarded to Dr. James Walker Dawson. Lord Polwarth presented to the College an autograph letter by Edward Jenner dated Sept. 14th, 1799.

Annotations.

"Ne quid nimis."

CONGENITAL MALFORMATIONS.

CONGENITAL abnormalities have always been a source of interest and speculation to mankind. In olden days they were as often as not referred to diabolical paternity, and frequently the unfortunate mother of such offspring had reason to regret her assumed familiarity with the infernal powers. Since Geoffroy St. Hilaire and v. Vrolik classified monsters on more scientific lines embryology has been invoked in explanation of them all. Yet it sometimes happens that they themselves are really the only foundation for the embryological statements made to account for them. As a matter of fact, normal embryology is an introduction to normal anatomy, and not by any means necessarily an explanation of abnormalities.

Mr. C. P. G. Wakeley gives an interesting description, in the *Journal of Anatomy* for April, of a case on which he had operated, in which were several congenital malformations of the intestinal canal; he refrains from offering any general explanation of their concurrence save what might be conceded to some failure in nutrition. In this restraint Mr. Wakeley shows a philosophic wisdom such as is not always to be found. Whether nutritional faults are to be classed among the causes or not, it is certain that no other is to be decidedly given in the present state of our knowledge. It is permissible to doubt whether abnormalities such as those he describes can be considered even as persistences of normal stages, whether, in fact, there has been any arrest at a definite developmental point, or whether the resemblance to such a stage is not merely general and superficial, the end-result of a growth that has been faulty from the beginning. In this last case there could hardly have been a "normal" stage. It is well to understand that our present knowledge of organogeny, detailed as it is, would never account for the great majority of abnormalities. Even though such a simple thing, for example, as a cleft palate may be certainly referred to failure in the growth-forces of the maxillary process, this is no explanation of it, but is merely a re-statement of the condition in other words. Such a form of re-statement is frequently given ingenuously as an explanation, but in most of the complicated forms of abnormalities even this is not possible in terms of normal embryology. The truth is that we are practically ignorant of the forces and inter-relations behind the phenomena of growth, and are only acquainted with their end-products. The accumulated forces of phylogenetic development are hidden among these, only recognisable here and there, but undoubtedly pervading the activities throughout.

This thought rises in the mind in association with the condition of anal canal in the penis, which is mentioned by Mr. Wakeley in his discussion of the cloacal malformation in his case, and is, no doubt, as he remarks, to be referred to the ectodermal cloaca. The theory that the rectum, or its lower part, is produced by a secondary downgrowth from the cloaca is not in keeping with the facts of ontogenetic development. But one would hesitate to say that it might not be a phylogenetic memory, which may find its expression under unusual circumstances. It may be that future work will show something of this sort to be at the bottom of certain monstrosities, or it may open up vistas in most unexpected directions. Not until some idea is gained of the forces at work—not of their nature but of their methods—can we really hope for much help from embryology, and in most cases we can get none at all. Yet those who, like Mr. Wakeley, carefully report and consider such cases, are doing good spadework, preparing the soil in which, let us hope, some future explanatory system will surely grow.

ECLAMPSIA AND ITS TREATMENT.

THE importance of eclampsia is strikingly shown by the figures furnished by Prof. Stroganoff,[1] who calculates that no less than 5600 mothers and 8400 children die every year in Europe from this complication of childbed. In England the maternal mortality is as much as 25 per cent. even at the present time. It is now some 25 years since Stroganoff first published his method of treatment founded on his contention that the fits play the most important part in the high death-rate and that everything must be done if the patient is to be saved to prevent the recurrence of the convulsions. That the prophylactic method, as practised by him, is most successful is shown by his results, published so long ago as 1908, of 360 cases of eclampsia with a maternal mortality of 6·6 per cent. and a fœtal mortality, not including the third stage of labour, of 21·6 per cent. If the conditions are favourable Prof. Stroganoff believes that the maternal mortality should not exceed 1 to 2 per cent. He favours the theory of the placental origin of the disease and regards eclampsia as mainly the result of two factors—the quality and quantity of the toxins circulating in the mother's blood and the increased degree of irritability of her nervous system. The increased frequency of the fits during labour he would attribute to the increase in the virulence of the toxins produced by the labour pains. Assuming that eclampsia is the result of these two factors, then the treatment should be directed towards lessening the quantity of the toxins in the blood and diminishing the irritability of the nervous system. Forced delivery, as experience has shown, does not answer the purpose. As he believes the occurrence of the fits to lead to a great increase in the amount of toxins in the blood, then it is essential to try and stop them. The fundamental principle underlying this prophylactic method, then, is to prevent the reappearance of the fits, and Prof. Stroganoff endeavours to accomplish this by the combined administration of morphia, chloral hydrate, and chloroform. The effect of these drugs is to calm the patient, produce sleep, to lessen the spasm of the blood-vessels, and to lower the blood pressure. To diminish the concentration of the toxins in the blood, venesection and the introduction of fluid into the body are also practised. In carrying out the treatment, the first principle is to remove all sources of irritation. The second principle, the administration of narcotics, is disputed by many authorities, but there is a large amount of evidence accumulating from day to day in its favour. According to the author the unfavourable effects which have been found to follow the administration of morphia are largely due to overdosage. He never administers more than 2/3 gr. in the 24 hours. The best drug is chloral hydrate up to doses of 100–140 grains in the day. The combination of small doses of chloroform with the chloral hydrate appears to be beneficial, and given in this way does not seem to give rise to the harmful effects which follow the prolonged administration of chloroform. Minor operative procedures to hasten delivery may be undertaken, but with increasing experience thay have become less and less necessary because the prophylactic method by itself gives such good results that labour may be allowed to occur spontaneously. Venesection to a moderate degree seems to be undoubtedly beneficial.

The results obtained by Prof. Stroganoff are immeasurably superior to those which follow most other methods of treatment; the only series of results which bear comparison with his are those in use at the Rotunda Hospital, ably set out by Dr. Gibbon FitzGibbon in a recent article in our columns.[2] The publication of these papers at the present time serves as a timely reminder that forced delivery, whether practised by the abdomen or by the vagina, gives extremely bad results, and we hope that a careful study of these figures will go far to convince the advocates of the treatment of eclampsia by Cæsarean section that this procedure has nothing to recommend it and should not be performed. Eclampsia is not a common disease and undoubtedly as a result of greater antenatal care of the mother will become rarer and rarer, but it is to be hoped that this method will receive a careful and exhaustive trial in this country and that those who employ it will make themselves conversant with the precise details as laid down by Prof. Stroganoff. The treatment of these cases has in the past often been so complicated and included so many different factors that any comparison between different methods has been almost impossible. We hope, therefore, that the warning conveyed in the report of the Committee appointed by the Section of Obstetrics of the Royal Society of Medicine to consider the question, "that the majority of the fatal cases were overtreated and that in a considerable number of cases excessive treatment must have been a contributory factor in bringing about the fatal result," will be taken to heart.

[1] My Improved Method of the Prophylactic Treatment of Eclampsia, Brit. Jour. Obstet. and Gynæc., vol. xxx., No. 1, 1923
[2] THE LANCET, March 31st, 1923.

RENAL TUBERCULOSIS.

AT a meeting of the Academy of Medicine on Feb. 9th, Prof. L. Ferria gave some interesting details based on his experience of 126 cases of renal tuberculosis under his care at the urological section of the Hospital of S. Giovanni at Turin.[1] These reached the high proportion of 47 per cent. of all cases of renal suppuration (269), the disease being unilateral in 106, of which 89 were submitted to operation. He called attention to the rarity of partial occlusion of the kidney and the less rare condition of total occlusion to which he attributed the majority, if not all, of the few cases of clinical cure of renal tuberculosis. The bladder was implicated early in 80 per cent. of the cases, and in the great majority of them the course of the disease was a descending one. In contrast to the vesical symptoms, those attributable to the kidney were little if at all in evidence; pseudo-colic was rare, and painful sensations might be felt on the healthy side due to reno-renal reflex. Palpation positive in many cases might be negative and deceptive, as when ptosis of the liver gave an apparent increase in volume to the right kidney. On the other hand, a thickened and indurated ureter felt per rectum or per vaginam had a definite diagnostic value. The possibility of surgical cure rested on the knowledge that the affection was unilateral, and on the integrity or at least the functional efficiency of the kidney left in situ. The best means of ascertaining these fundamental conditions were furnished by cystoscopy and ureteral catheterisation. But when the latter was not possible, Ambard's coefficient, when properly interpreted, afforded useful help; in 11 cases in which it was below 0·100 the author proceeded with complete success to nephrectomy without resort to ureteral catheterisation, because either palpation or the indigo-carmine test, or double exploratory lumbotomy (if a convenient hybrid word may be pardoned) gave him assurance that one of the kidneys was so profoundly disorganised that the coefficient was favourable to a state of functional efficiency in the other. Out of 89 nephrectomies the author had six deaths due to the operation and six in the first six months after. The subsequent history of these cases revealed the fact that death from tuberculosis of the remaining kidney was very rare, occurring in only two instances; more frequent was death from chronic pulmonary tuberculosis, cachexia, and meningitis, which occurred in seven cases. These were operated on in a condition of advanced vesical tuberculosis, and this confirms the necessity of not waiting too long before adopting surgical measures. The practising physician, whenever he encounters patients who have suffered for some time from cystitis of an irregular and variable course rebellious to ordinary treatment, especially if a history of previous gonorrhœa is wanting, and if calculus and

[1] La Riforma Medica, March 19th, 1923.

prostatic hypertrophy can be excluded, should think of tuberculosis. Once a diagnosis of urinary tuberculosis is made it may be definitely affirmed that there is renal tuberculosis except in cases of prostatic tubercle in men, a condition easily recognisable, and in the very rare cases of tubercle of the uterine appendages in women spreading to the bladder. As soon as the diagnosis of renal tuberculosis is established nephrectomy is clearly indicated if the state of the other kidney allows; only when nephrectomy is performed early is it a fairly safe operation.

THE CEREBRO-SPINAL FLUID IN MENINGITIS.

EVER since lumbar puncture came into general use, persistent efforts have been made to determine the existence, and the degree of virulence, of meningitis of aural origin by means of chemical and microscopical examination of the cerebro-spinal fluid. If this could be done with exactitude it would be of inestimable value both for prognosis and as an indication for operation. That exactitude has not yet been attained is shown by the numerous criteria which have been adopted, and by the different value placed on each by different observers. Increased pressure, turbidity, increase of globulin, diminution of sugar-reducing power, the number of cells, whether polynuclear or mononuclear and whether showing signs of degeneration, and finally the presence or absence of bacteria, and their varieties, have all been used as criteria in estimating the presence and virulence of meningitis. Dr. Holger Mygind, of Copenhagen,[1] considers the cell count of the greatest importance; he believes that meningitis is probable if three or more cells are present per cubic millimetre, although the fluid does not become opalescent until more than 200 cells per cubic millimetre are present. But as a guide to prognosis, no one point, nor even the sum of all, is infallible; many cases with turbid cerebro-spinal fluid recover, and a considerable number have recovered after micro-organisms have been found in the fluid, as in the case recently reported in THE LANCET by Mr. H. L. Martyn.[2] In an article on the Clinic and the Laboratory in the Classification, Prognosis, and Treatment of Otitic Meningitis, Dr. Henri Aboulker, of Algiers,[3] emphasises the fallacy of trusting too greatly to laboratory methods of diagnosis, and considers the clinical examination to be of greater importance. He finds no definite relationship, in a large series of observations, between the various criteria; for instance, bacteria with intact lymphocytes, and damaged lymphocytes in an aseptic fluid. Nor is there a constant relation between the character of the fluid and the outcome of the case, a benign purulent type being fairly well recognised and, as already mentioned, a small number of cases with bacteria recovering; Aboulker reports three such cases and Mygind four. Dr. S. G. Askey reports another in our present issue. Aboulker is in agreement with the remarks we made in a recent annotation[4] anent the term "meningism," when he says "il n'y a pas de *fausses méningites*, il n'y a que des erreurs de diagnostic." Mr. Edward D. Davis, who, as we understand from the recent correspondence in our pages, follows Mygind in placing considerable reliance on the cell count as an indication for operation, has just communicated to the Royal Society of Medicine (see p. 955) his views on the morbid anatomy and drainage of otitic meningitis. He has made a series of experiments with the injection of methylene-blue to demonstrate the paths of infection from the internal ear and from the region of the lateral sinus; and he comes to the conclusion, among others, that lumbar puncture is inefficient as a method of drainage, but that repeated lumbar puncture does not tend to increase the area of suppuration. The cerebro-spinal fluid obtained by lumbar puncture does not necessarily give an accurate picture of the state of the meninges, because the thick gelatinous pus, which forms in the subarachnoid space, may shut off the extension of the inflammatory products and prevent them from reaching the spinal canal; thus the outlying regions of the cerebro-spinal system may show only the signs of a serous meningitis, while a localised suppurative condition is present in the cranial cavity.

In fine, the signs elicited by lumbar puncture are not infallible, but are nevertheless of great value for diagnosis and prognosis; laboratory tests must here, as elsewhere, be correlated with the signs disclosed by clinical examination. When so used they form a fairly reliable guide to the state of the meninges and to the advisability or inadvisability of operation. It is on early diagnosis and, where necessary, prompt operation that the possibility of reducing the mortality depends.

[1] Journal of Laryngology, December, 1922, p. 597.
[2] THE LANCET, March 10th, 1923, p. 485.
[3] La Presse Médicale, April 14th, 1923, p. 342.
[4] THE LANCET, April 28th, 1923, p. 862.

NEW DISINFECTION LAWS IN GERMANY.

UNDER a decree recently issued by the Prussian Minister of Health an entirely new system of disinfection in infectious diseases is formulated. The essence of the decree is, first, to organise disinfection at the bedside of the patient during the whole course of his illness in such a way as to make a final disinfection of secondary importance, or, indeed, altogether superfluous; and, secondly, to dispense with formalin vapour and dry heat in the disinfection of rooms and articles by substituting the free use of a disinfectant fluid throughout the course of the illness. This ministerial decree has reference only to the contagious diseases specified in the Act of August 28th, 1905, including tuberculosis, diphtheria, acute meningitis, scarlet fever, typhoid fever, dysentery, and trachoma, while the Act of 1900 relating to plague, cholera, typhus, and small-pox, remains in force with all its provisions. The principle underlying the new regulations is that in the vast majority of cases infection occurs from individual to individual either by direct contact or by the transmission of germs over a short distance. Thus it is only the patient or the carrier who needs to be supervised, the part played by fomites in the transmission of infection being negligible, except where contamination is recent and massive, any bacteria deposited quickly losing their virulence and their vitality. Infection occurs almost entirely in one or more of three ways: by the projection of droplets of saliva—or more accurately of droplets of nasal, pharyngeal, tracheal, or bronchial secretion—as in tuberculosis, diphtheria, cerebro-spinal fever and scarlet fever; by fæcal material or urine, as in typhoid fever and dysentery; and by the hands, as in these and other diseases, such as trachoma. Any method of disinfection must therefore take account of these three possible sources of contamination.

The regulations in the case of diphtheria, which we may take as an example, include, on the one hand, a detailed list of articles to be disinfected: utensils, body linen, sputum, floor; and, on the other hand, instructions to the patient to turn away his head and to cover his mouth when coughing, and to the attendants to avoid all unnecessary contact, to place themselves behind him when handing him anything and to stand at a distance of two arm-lengths from him when he coughs. The disinfectant to be used is a 1 in 1000 solution of corrosive sublimate—a choice apparently made upon grounds of economy—failing which cresol may be used. At the end of the illness, providing that the instructions have been faithfully carried out, nothing remains to be done, although in exceptional circumstances, such as in overcrowded tenements or in lodging-houses, the medical officer of health may prescribe formalin or steam disinfection as an additional precautionary measure. The municipal authority is charged with the duty of distributing the disinfectants to the public, a charge being made, except in the case of necessitous persons. The heaviest responsibility in connexion with the scheme falls upon the municipal nurses and the official disinfectors who have to attend a preliminary course of instruction lasting, in the case of the nurses, at least eight days, exclusive of Sundays, and in the

case of the "disinfectors" a clear fortnight. As soon as the police have been notified of a case of infectious disease a nurse visits the family, repeating the visit every two or three days until the end of the illness in order both to instruct the members of the household in the prescribed ritual, and also to see that the directions are properly carried out. The rôle of both nurses and disinfectors—the latter intervening as a rule only where no nurse is available—being strictly confined to prophylactic measures, no interference of any kind with the treatment of the patient is allowed on the part of these officials under penalty of forfeiture of their diploma or licence, and even their presence in the sick room is contingent upon the permission of the doctor in attendance and the invitation of the relatives of the patient.

The scheme has been criticised in Germany both on hygienic and on economic grounds. Not only does some doubt appear to be felt as to how far it will be found practicable adequately to supervise and control this bedside disinfection, but it is recognised that an extremely large personnel will be required. Moreover, as the disinfecting stations will still have to be kept up for the diseases specified under the Act of 1900, a double expenditure will inevitably be entailed. On the other hand, it is certain that the scheme will result in a new and widespread campaign in the instruction of the public as to the ætiology and prophylaxis of the commoner infectious diseases, and such an educational propaganda can hardly fail in the long run to react favourably upon the public health of the country.

ELECTRO-COAGULATION IN LUPUS.

THE Finsen Institute in Copenhagen is to be congratulated on the pioneer spirit in which its staff keeps alive the best Finsen traditions of scientific research. Thanks largely to the observations of A. Reyn, chief of the Institute, lupus has come to be regarded as being, in many cases, connected with a deep-seated focus of tuberculosis. Hence the growing tendency at the Finsen Institute to give general as well as local treatment in lupus. Local treatment is, however, of great importance, and a recent paper by Dr. A. Vibede,[1] of the Oto-Laryngological Department, gives a very hopeful review of the experience of the past two years in the treatment of lupus by electro-coagulation, the apparatus used being a powerful diathermic plant supplied by Löwenstein, of Berlin. After giving an account of the technique, Dr. Vibede analyses the results obtained in 283 cases in the period November, 1919, to August, 1921. Several of these 283 patients had other tuberculous lesions, and as many as 221 had undergone some other local treatment, but without great success. It will thus be seen that the disease in many cases was of an obstinate character. As many as 90 discontinued treatment or could not subsequently be traced. Of the remaining 193, no less than 160 were apparently cured, and 27 were improved. Considering that the duration of treatment was less than a month in 128 cases, the results must be considered as remarkably good, and they compare well with the results obtained by Reyn's electrolysis—the only method which, in Dr. Vibede's opinion, can be expected to compete with electro-coagulation. The results of electrolysis have been shown by Strandberg, of the Finsen Institute, to be comparatively poor; of 200 patients thus treated, only 96 were apparently cured. Thus electrolysis cures approximately only 50 per cent., while electro-coagulation cures 82 per cent., and in much shorter time. It also does not entail the giving of the large doses of iodine required for electrolysis. Further advantages of this method are its not drawing blood, the ease with which it can be carried out by a skilled specialist, and the smallness of the risk of spreading infection. On the other hand, it has certain very definite disadvantages. The cost of the apparatus is considerable, not a little dexterity and practice are required of the operator, and, last but not least, the pain of the treatment cannot be overcome by local anæsthesia. Even when the treatment is carried out skilfully it is very painful, and the pain of electrical and thermal stimulation may radiate far beyond the field of operation. Yet most of the patients at the Finsen Institute were able to endure the treatment without a general anæsthetic when the application was of short duration, but it was sometimes necessary to induce shallow ether or ethyl chloride anæsthesia.

[1] Acta Oto-Laryngologica, 1923, v., Fasc. I.

THE CLASSIFICATION OF STREPTOCOCCI.

AN adequate classification of the streptococci has not yet been achieved, and those pathologists who have had the experience of examining sputa and throat swabs from cases of naso-pharyngeal catarrh—especially in connexion with recent epidemics of influenza—know only too well what a perplexing pursuit this examination can be. As clinical pathology extends its bounds this large and heterogeneous class of organisms continues to grow and confusion seems to increase rather than diminish. It was thought at one time that the fermentation of sugars would solve the difficulties, but disappointment has followed. Sugars supplied are not always pure, and the autoclaving process of sterilisation leads to chemical changes which have doubtless, in the past, been responsible for discrepant results. A new fermentation tube by means of which carbohydrates may be separated from proteins during sterilisation has recently been devised by Dukes,[1] which may now obviate this difficulty. Again, the old difficulty of obtaining pure cultures—which is of paramount importance in classification work—is a very real one in the case of an organism such as the streptococcus, witness the confusion which reigns in the description of the morphological characteristics of the organism in the various standard text-books of bacteriology. The truth is that the growth of bacterial subcultures on pure lines is by no means an easy task.

There are indications, however, that advances in classification are being made. The use of the bile-solubility test for separating off the pneumococcus group, for instance, has been a considerable advance, and it would be a step forward if clinical pathologists in reporting on the organisms of the pneumococcal and streptococcal groups, would make it a rule to state whether or not the strain reported on was bile-soluble. At the present moment it almost seems as though we might regard bile solubility as the crucial test of the true pathogenic pneumococcus, but whether we should be justified in going a stage further and regarding organisms morphologically and culturally resembling pneumococci, but not bile-soluble, as streptococci is another question. Probably, also, the separation of the heterogeneous Group IV. Pneumococci, when it is achieved, will produce some surprises. For the true streptococci the hæmolysis of blood-agar media seems to offer the best means of classification. Brown[2] separates these organisms into alpha and beta types according to the degree of hæmolysis, and ascribes the title gamma type to non-hæmolytic varieties. Valentine and Mishulow[3] have investigated a number of strains by this method, and confirm Brown's results. More recently still Miss Mary L. Cowan[4] has separated these hæmolytic strains into "rough" and "smooth" types, and has shown "an almost complete lack of virulence on the part of the 'rough' elements," which may throw light on the discrepancies noted by different workers, with the hæmolytic streptococci.

On the clinical side these hæmolytic streptococci are equally variable; some are found in fulminating broncho-pneumonias and empyemas, others in the crypts of chronically hypertrophied tonsils, and it seems difficult to believe that these strains are all one and the same species of organism. Virulence tests in the

[1] Dukes, Cuthbert: Proc. Roy. Soc. Med., Section of Path., 1923, xvi., p. 13.
[2] Brown, J. H.: Monograph 9, Rockefeller Institute, 1919.
[3] Valentine, E., and Mishulow, L.: Journ. of Immunol., 1921, vi., 301.
[4] Brit. Journ. of Exp. Path., 1922, iii., 187.

mouse, and immunity tests such as agglutination, precipitation, and complement fixation may help to differentiate further these apparently anomalous characteristics. Until some adequate classification is forthcoming, it is obvious that prognosis in regard to streptococcal infections must be guarded, and our opinions on the use of anti-streptococcal serum and streptococcus vaccine in treatment must be characterised by extreme caution.

OLEO-BISMUTH IN SYPHILIS.

THE recent introduction of bismuth as a specific remedy for syphilis has been followed by an extensive trial of numerous preparations. The original French preparation, trépol, has been supplanted by a new trépol, the intramuscular injection of which is said to be comparatively painless. At present there is a tendency in favour of the insoluble preparations of bismuth in preference to the soluble preparations, and it is held in certain quarters that the specific action of these preparations depends mainly, or wholly, on their content of metallic bismuth. The molecular arrangement of the various bismuth preparations seems to be a matter of comparatively slight importance, and in this respect, at any rate, the bismuth preparations differ from the salvarsan group. In the *Schweizerische medizinische Wochenschrift* for March 22nd there is a paper by Dr. E. Ramel of the Dermatological Clinic in Zurich. The preparation which he recommends is oleinate of bismuth (l'oleo-bismuth "Roche"), the formula of which is $(C_{17}H_{33}COO)_3$-Bi. The bismuth is very finely suspended and the stability of the suspension is so great that even after standing for months the solution shows no deposit. The treatment consists of bi-weekly intramuscular injections of 2 c.cm., 20 or 30 injections being given in one series during which the total amount of bismuth administered is 2–3 g. The therapeutic results achieved in Zurich have been quite equal to those obtained with the painless preparation of trépol, and only in one or two cases were the injections followed by the appearance of a slight bismuth line in the gums. This line soon vanished after the drug had been discontinued, and in no case did the injections give rise to albuminuria. Bismuth, it would seem, has a more rapid effect on the cutaneous manifestations of syphilis than on the Wassermann reaction, which may persist long after the secondary eruptions have vanished. But, as Dr. Ramel suggests, the ultimate effect of bismuth on the Wassermann reaction may prove lasting, in spite of the delay in converting a positive to a negative reaction. Salvarsan and bismuth, being markedly different in their serological actions, may prove mutually supplementary, and Dr. Ramel, like other advocates of bismuth, does not regard it as a substitute for, but rather as an adjuvant to, the salvarsan group.

ALCOHOL AND PNEUMONIA.

To determine the influence of the consumption of alcohol upon the prognosis of the disease, Dr. Joseph A. Capps and Dr. George H. Coleman[1] recently made a study of 3422 cases of lobar pneumonia which were admitted to the Cook County Hospital, Chicago, during the course of eight years, which include the period 1911–17 before prohibition, and the two years after prohibition, 1921–22. The intermediate years were omitted on account of the streptococcus and influenza epidemics, which produced atypical forms of pneumonia. It was found that the mortality was considerably higher in moderate drinkers—i.e., those who drank regularly two or more glasses of beer or one or two glasses of spirits daily—than in abstainers or in those who drank less than two glasses of beer a day, or who drank spirits occasionally, while in excessive drinkers the mortality was highest of all. The average age of the moderate drinkers in the series was about five years higher than that of the abstainers or light drinkers, and the average age of the excessive drinkers was about three years higher than that of the moderate—a curious fact which the authors regard as "likely" but do not stop to explain. But the mortality was reckoned separately in each group by decades in order to exclude the age factor entirely from the problem, with the result that the death-rate among moderate drinkers showed a remarkable increase over the abstainers, and the death-rate among excessive a still greater increase over the moderate. Although the writers do not claim that prohibition is lessening the death-rate from pneumonia, they have observed within recent years an increased proportion of abstainers or light drinkers and a corresponding decrease in heavy drinkers. The practical disappearance of delirium tremens within recent years, as compared with its frequency before prohibition, is also evidence of the lowered rate of alcohol consumption. The present paper recalls an article which was published two years previously by Dr. J. L. Miller,[2] whose observations were also made at the Cook County Hospital, on the effect of prohibition on the incidence of fatal cirrhosis. Dr. Miller, who carefully investigated the history of every case of cirrhosis admitted to his wards, never failed to obtain a history of marked alcoholism. In 1920, the year following the introduction of prohibition, there were only 19 cases of fatal cirrhosis admitted, all but one of which gave a history of chronic alcoholism, as compared with 48 cases of cirrhosis admitted in 1919, 87 in 1918, and from 137 to 160 in each of the years 1910 to 1917. Dr. Miller concluded that fatal cirrhosis, in the United States at least, was associated largely, and possibly entirely, with the use of alcohol.

[1] Journal of the American Medical Association, March 17th, 1923.

HERPES ZOSTER GENERALISATUS.

IN a review of the literature, with the report of a personal case, Dr. Mihran B. Parounagian and Dr. Herman Goodman,[3] of New York, remark that the first case of generalised herpes zoster was reported by Haslund, in 1897, in a man, aged 59, who presented a left dorso-abdominal zona, with additional vesicles on the trunk and extremities, left border of the tongue, and mucous membrane of the gums. The temperature was 102° F. The disease lasted about three weeks and ended in complete recovery. The writers have collected about 25 other cases, most of which occurred in elderly persons who were not very robust. Although age alone is no objection to the existence of varicella, the generalised eruptions associated with herpes zoster in advanced adult life have always been described as different from varicella as ordinarily seen. Until, however, the bacteriological ætiology of herpes zoster is established, the question of the identity or non-identity of herpes with varicella cannot be satisfactorily answered. In most cases, including that reported by the writers, the aberrant vesicles were scanty in comparison with the primary segmental eruption. In two cases, however, reported by Colombini and De Amicis respectively, the secondary eruption was remarkably extensive, occupying the cervical, cervico-brachial, dorso-pectoral, dorso-abdominal, lumbo-inguinal, sacro-sciatic, and lumbo-femoral regions on both sides. The present writers' case was that of a man who gave his age as 64, though he appeared to be many years older. In addition to a well-marked eruption of right abdominal herpes zoster of about a week's duration he presented numerous scattered vesicles and small, ill-defined papules on the trunk, especially anteriorly, on both flanks, axillæ, thighs, shoulders, and arms. The lower part of the legs and forearms contained hardly any lesions, and the face and buccal mucosa were free. A diagnosis of abdominal herpes zoster, accompanied by varicella, was first made, but that of generalised herpes zoster was substituted afterwards.

[2] Ibid., 1921, lxxvi., 1646.
[3] Archives of Dermatology and Syphilology, April, 1923.

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XIX.

HEART FAILURE: THERAPEUTICS.*

IT is remarkable what a large proportion of patients with heart disease fail in the same way. For example, one who has been breathless on exertion for many years with mitral stenosis acquires a rapid irregular pulse which is due to the onset of auricular fibrillation. He then becomes more breathless, the liver swells from venous congestion, and the legs become œdematous. We will take this common example of heart failure and consider the general management, the diet, the use of digitalis and other remedies, and the treatment of certain special conditions.

General Management.

In health the rate of the heart is lowest in recumbency, therefore in failure this position must be regarded as beneficial. Where both the abdomen and the thighs are greatly swollen, however, the pressure on the diaphragm may only be relieved by sitting out of bed. If, therefore, bed has become intolerable, but not unless, one should accept the fact with good grace and make suitable dispositions. A sufficiency of blankets should encircle the lower half of the body. A "heart chair" may be improvised by placing the edge of a firm heavy table in front of an easy chair with not too sloping a back or well filled with pillows behind. Patients like to lean forward upon such a support and may be able to sleep with the head resting on the arms folded on the table. The room must be warm though well ventilated, and some patients derive great satisfaction from a draught of air if it is not too cold.

Diet.

A diet of milk alone, not more than 1½–2 pints in the 24 hours, is best suited to the stage of severe failure. It may be given hot or cold, flavoured with tea or coffee, at four-hourly intervals. On no account should more be pressed upon the patient; for food will not save him, whereas a quiet stomach free from flatulence and tolerant of medicine will help to do so. This restricted milk diet also provides the advantages of a small fluid intake and a minimum of salt. In a few days or a week solids may be given in addition, and cups of tea and coffee allowed, but still the total daily liquid should remain below two pints. If the patient has never been able to take milk or it proves unsuitable, a dry diet may be composed of toast with a little butter, eggs, custard and baked apple, minced or potted meat sandwiches, fish, and chicken. These should be arranged in definite small meals amply spaced. A small cup of tea or coffee is permissible, or half a tumbler of water, but again the daily liquid should be limited.

Medicinal and Other Treatment.

Suitable aperients are calomel gr. i.–ii. overnight, followed early next morning one hour before any food or drink is taken by sulphate of soda, drachms i.–iv., in hot strong solution as required. Drastic purges and diaphoretics of any kind are not indicated in cardiac dropsy.

1. *If failure is extreme and life seems in danger*, we rely upon three measures—venesection, oxygen, digitalis.

The indications for *venesection* are orthopnœa with cyanosis and distended veins. If these are present it matters little what the lesion is. If very urgent, blood may be let from the external jugular vein without hesitation. As in the arm nothing is required but to insert the point of a bistoury or abscess knife, and to cut outwards through the vein; it is unnecessary to make a big operation of it. There is sometimes difficulty in removing enough blood; for not less than 20–30 oz. should be taken, as the object is to reduce the mass of blood in circulation and thereby to relieve the exhausted pump. The immediate relief is pronounced and will justify the procedure to the patient and his friends, though it cannot be expected that the relief from this means alone will continue.

Oxygen is properly used whenever there is much cyanosis with dyspnœa. It cannot be given in too great a concentration, so the tube should be as close to the mouth as possible. A far better method is to connect the tube with a soft rubber catheter. When the right gentle flow is obtained it is oiled and pushed straight back through the nostril for about three inches and left there. It is fixed by a slip of strapping to the cheek, and the connecting tube is loosely moored to the pillow beyond the shoulder by a large safety-pin. Oxygen can thus be given continuously or for definite periods according to need.

Digitalis, as commonly given, has only one disadvantage—it takes about two days to come into action. If it seems too dangerous to wait for so long, a digitalis effect may be obtained within an hour by an intravenous injection of *strophanthin*, gr. 1/200 (obtainable in ampoules). This is neither the maximum nor a dangerous dose, and it may be repeated in 12 hours if required. But this injection is not to be used at all if digitalis has already been given, otherwise the total amount of digitalis bodies in the system may be reinforced to a dangerous level. Therefore, if digitalis has already been given, or if oral administration is preferred, a dose of 15–20 minims of the tincture four-hourly is the least dose likely to act in time to affect the outcome. It is for just such urgent cases of failure, as an alternative to intravenous strophanthin, that the massive doses of digitalis suggested by Eggleston are likely to come into use. In the modified course, 1½ drachms of the tincture forms the first dose; 1 drachm six hours later the second; and ½ drachm six hours later still the third and last, completing the total required by the heart for the time.[1]

When much fluid is present in the chest—and a right hydrothorax is not uncommon—removal of the fluid may quickly reduce an urgent dyspnœa. The same is true to a lesser extent of extreme ascites. Now and then, patients are seen with apparently hopeless failure and gross œdema involving the whole body including the thorax and even the arms. Venesection may be difficult and there may be no time for medicinal measures. In such a case the best treatment is to give oxygen and to incise the legs as described later.

2. *In Failure of Average Degree.*—When life does not seem in danger but the symptoms and signs of failure are severe, a course of rest and digitalis may be all that is required for recovery. As soon as the patient is seen tincture of digitalis should be ordered in a dose of 1 drachm daily, not less; for example, tinct. digitalis, B.P., ℥ x., aq. chloroformi ad oz. ½, four-hourly. There is no advantage in combining any other drugs with it, least of all iodide or nitrite, for digitalis does not in therapeutic doses raise the blood pressure, and the simple solution of digitalis scarcely irritates the stomach at all. Within two or three days its beneficial effect should begin to be seen. The patient will be less breathless, the urine will increase in amount, and the pulse-rate will be reduced. But the dose should not be reduced until improvement is more pronounced. If nausea is provoked and the pulse-rate has fallen to 60–80 a minute, the dose should be reduced to 10 minims three times a day. Sometimes it is not possible to obtain the full effect on the heart before a vomit occurs; in such a case the drug should be stopped, to be continued afterwards in the half dose (30 minims daily). There is no danger in giving digitalis in adequate doses if heed is taken of the toxic signs—(*a*) nausea and

* An article in this series, entitled Heart Failure: Preventive Treatment, appeared in last week's issue of THE LANCET.

[1] THE LANCET, 1922, ii., 703.

vomiting, (*b*) a pulse-rate below 60, and (*c*) digitalis coupling (bigeminy due to an extrasystole after each normal beat). When any one of these is found digitalis should be stopped.

Special Conditions.

1. *Insomnia.*—The measures used in urgent cases, as outlined above, are the surest ways of procuring sleep. In some patients a single dose of whisky, 1–2 oz., will act as a soporific. If something more is needed paraldehyde may be given in a dose of 1–2 drachms, preferably as capsules each containing 30 minims. If there is pain or excessive discomfort, an injection of morphine gr. ¼ is indicated.

2. *Vomiting.*—Heart failure itself may be the cause of vomiting, especially if the bowels are confined and the diet has not been modified. It may even be necessary to repeat the dose of digitalis which has been vomited or to substitute a digitalis pill. If there is vomiting within a day or two of taking digitalis, and other signs of digitalism are absent, it is most unlikely to be due to the drug. I am suggesting that patients often object to digitalis on a trifling pretext, such as a single attack of vomiting, or alleged headache, or diarrhœa, when these are not due to digitalis and when digitalis is urgently required by the patient's condition.

3. *Obstinate Dropsy.*—If digitalis alone does not remove the dropsy, the combination with mercury, as in Guy's pill (e.g., fol. digit., hyd. c. creta, pulv. scillæ, āā gr. i), t.d.s., may produce diuresis. If not, the most valuable diuretic is theobromine sodium salicylate, B.P. It is given in doses of 10–20 gr. t.d.s., either in tablets or in a mixture well flavoured with syrup of ginger. It may be used at the same time as a moderate daily dose of digitalis, or instead of digitalis for a few days only. If drugs alone with rest do not dissipate all the œdema a salt-free diet may assist. This is composed of salt-free bread, biscuits or scones, with eggs, custard, milk, and fresh butter. No salt is to be added at table or in the kitchen.

When all these measures have failed, there remains the mechanical removal of the dropsical fluid by tapping the abdomen and by puncture of the legs. For the latter, the patient should sit in a chair for 12–24 hours so that the water can gravitate to the pendent limbs. The feet are then placed in a large tin, and after careful washing they are painted with a weak solution of iodine. With a fine tenotomy knife or a large flat surgical needle, tiny incisions, 10–20 in number, are made along the front of the leg and dorsum of the foot, allowing sufficient area of untouched skin between them. As with venesection, these patients are in such a plight that they rarely object to the procedure. The blankets should be wrapped widely round the basin so that nothing touches the skin, and the fluid is allowed to stream down. In a day or two when the copious flow has ceased gauze should be applied and the patient should return to bed. Occasionally the circulatory improvement from the removal of fluid exceeds the bounds of reasonable expectation.

JOHN PARKINSON, M.D., F.R.C.P. Lond.,
Assistant Physician to the London Hospital; Physician to Out-patients, National Hospital for Diseases of the Heart.

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I. Medical Treatment of Gall-Bladder Disease, by Sir Humphry Rolleston. II. Early Pulmonary Tuberculosis in the Young Adult, by Dr. Claude Lillingston. III. Neuralgias of the Head and Neck, by Dr. Wilfred Harris. IV. Whooping-Cough, by Dr. T. Izod Bennett. V. Scabies and Pediculosis, by Dr. H. W. Barber. VI. Abdominal Injuries, by Prof. Charles A. Morton. VII. Aural Discharge in Children, by Mr. Harold Barwell. VIII. Vaginal Discharge, by Mr. A. W. Bourne. IX. Minor Injuries to the Eye, by Sir J. H. Parsons. X. Epilepsy, by Dr. Gordon Holmes. XI. Inguinal Hernia in Childhood, by Mr. C. W. G. Bryan. XII. Oblique Inguinal Hernia in Adults, by Prof. A. W. Sheen. XIII. Eclampsia, by Dr. Gibbon FitzGibbon. XIV. Club-foot in the Newly-born, by Sir Robert Jones. XV. Intestinal Worms, by Dr. R. Hutchison. XVI. Primary or Spasmodic Dysmenorrhœa, by Dr. G. Blacker. XVII. Measles, by Dr. Foord Caiger. XVIII. Heart Failure, Preventive Treatment, by Dr. J. Parkinson.

Special Articles.

A VOLUNTARY HOSPITALS COMMITTEE REPORT.

THE Voluntary Hospitals Committee of 1921, of which Viscount Cave was chairman, made, among other recommendations, one, that a Voluntary Hospitals Commission should be formed which would have as its principal duty the administration of the grant made by Parliament for the temporary relief of hospitals, which had fallen into financial difficulties, and that this Commission should be assisted by a number of county or county borough committees to act as its local advisers. The Voluntary Hospitals Commission, of which Lord Onslow is chairman, was constituted in accordance with the first of these recommendations, and it at once gave effect to the second by arranging for the formation of county and county borough committees throughout the country.

The first report of such a county or borough committee to reach us is that of the Surrey and Croydon Voluntary Hospital Committee, which is composed of representatives of the county council and borough council, including Dr. J. Cates, county medical officer of health, hospital representatives, local medical practitioners, and nominees of the Voluntary Hospitals Commission. These include Lord Cave, who was elected chairman of the Committee, and Sir Alfred Bingley was appointed its honorary secretary.

Report on the Hospital Accommodation Available in the Surrey Area.

At the request of the Committee, Dr. Cates prepared a report showing the extent and distribution of the accommodation available in the voluntary hospitals of the area, with suggestions as to the alterations and additions considered desirable. Dr. Cates's memorandum, reproduced as an appendix to the report, gives a complete survey of the resources and requirements of the Surrey area, so far as they relate to voluntary hospitals. In estimating the requirements of the county of Surrey he has found difficulties which would be equally inseparable from an attempt to estimate the adequacy of the existing accommodation in any county, and are thus of general interest. He points out that it is unsafe to gauge the adequacy of the accommodation at a hospital by the length of the list of patients awaiting admission, because the knowledge that there is a difficulty in obtaining beds soon acts as a deterrent both to medical men and their patients, and the authorities of a hospital may think that the needs of the locality are satisfied because there is no rush for vacant beds. Again, the absence of applicants may be due to the dislike of the rules of the hospital, dissatisfaction with the charges imposed, aversion to a member of the staff, or some other cause for the unpopularity of the institution. On the other hand, a hospital may have a long list of patients seeking treatment and rarely have a vacant bed because it is popular and attracts patients from a wide area. Medical men vary in the use they make of institutional treatment; in one district nearly all persons needing nursing are sent into hospitals, while in another admission is only sought for patients requiring an operation.

It seems clear, therefore, that some other basis for inquiry must be taken if a true estimate of the adequacy of hospital accommodation is to be made.

A Survey of Local Hospitals.

In order to form conclusions as to the adequacy of hospital accommodation Dr. Cates instituted inquiries as to 25 hospitals in the county and grouped the results in a table, included in the report, under the following headings:—

Name of hospital; medical staff; visiting surgical staff; other specialists; resident medical staff; nursing staff (trained and untrained); beds (men, women, cots, and private); number of patients in hospital per year; baths

(men, women, staff); sanitary accommodation (men, women, staff); operating theatre; out-patient department; mortuary; special department; method of admission; proposed extensions; maternity cases (normal or for surgical operations); remarks and recommendations.

Much interesting information is here collected and at the risk of appearing to emphasise the deficiencies rather than the best features at some of the hospitals we quote certain of the recommendations in the last column, for these are of more than local interest.

Extensions, in accordance with suggestions made by the Hospital Committee, are recommended at the Frimley Cottage Hospital, the Royal Surrey (Guildford) County Hospital, the Weybridge Cottage Hospital, and the Victoria Hospital, Woking. Dr. Cates notes that more beds are required at the Carshalton District Hospital, the Sutton Hospital, the Surbiton Hospital, the Epsom Cottage Hospital, and Royal Surrey (Guildford) County Hospital; more beds for children at the Dorking and District Hospital, for women and children at the Victoria Hospital, Leatherhead, and for women at the Victoria Hospital, Kingston. Mortuaries should be provided at the Cobham Cottage Hospital and Horley Cottage Hospital. Other interesting comments are made: for example, at the Caterham Cottage Hospital X ray treatment of ringworm is carried out by the matron, and a note is made by Dr. Cates that ringworm should be treated by a medical man. More domestic accommodation, bath-room and lavatory accommodation is desirable at the Sutton Hospital. As to the Reigate and Redhill Hospital he is of opinion that a new hospital is required, since money spent on an extension would be largely wasted; the needs of the district call for a modern hospital of at least 100 beds. As to the Molesey, East and West, Hospital, Dr. Cates considers that the premises should not be used as a hospital. It is noticeable that of all the hospitals under review two only, the Royal Surrey County Hospital and the Sutton Hospital, have a pathologist attached to the staff; 13 of the hospitals have a dentist attached. One only, the Thames Ditton Cottage Hospital, appears to have a gynæcologist, one, Surbiton Hospital, an aural specialist, three an ophthalmologist. To seven only of the hospitals is an X ray department attached.

Criterion for Admission to Hospital.

From a public health point of view a person should be admitted to hospital if complete recovery is jeopardised or convalescence is likely to be retarded by treatment at home. At the majority of institutions visited, it was stated that the beds were inadequate for the needs of the area. In assessing the value of this statement, it should be remembered that at many of the hospitals surgical emergencies—accidents, hæmorrhage, and the rupture of vessels—form the bulk of the work to the exclusion of more common and equally serious conditions such as pneumonia, rheumatic fever, and diseases of the heart. Until recently, it was the custom for medical men to rely on obtaining admissiom for any outstanding case into a London hospital. The authorities of these institutions are now reluctant to accept persons from the home counties unless they reside in the metropolitan area, and the cost of travelling still further discourages patients from seeking treatment there.

Recommendations.

Dr. Cates concludes: (1) That from the public health point of view there is reason for thinking that the total number of beds in the voluntary hospitals in Surrey is insufficient. His other main conclusions are summed up as follows by the Committee and accepted by them:—

(2) That there is a marked deficiency in hospital accommodation for women and children, and in facilities for treatment of diseases of the eye, ear, nose, and throat.

(3) That while recognising the valuable work done by the smaller hospitals, the piecemeal extension of small and unsuitable buildings, not originally planned for use as hospitals, is to be deprecated, as hospitals so housed are difficult to administer economically.

(4) That medical work should be gradually concentrated in larger and better equipped institutions, which are more economical to administer, attract a better qualified and more efficient staff, provide for all types of diseases and defects, and, besides admitting maternity patients, give scope for eye, ear, nose, throat, and X ray specialists. Moreover, such hospitals can be self-contained and act as training centres for nurses and students, and can provide sufficient work for a motor ambulance service, thus enabling the hospital to supply the needs of a larger area.

(5) That general hospitals of this type are required in the western, south-eastern, and possibly in the northern portions of the county area—viz., at Guildford, Reigate or Redhill, and perhaps Surbiton or Epsom respectively.

Sundry Points.

Grants.—As the result of inquiry it was ascertained that only 9 out of 32 hospitals had applied for grants, and that the remaining 23 had reported either that they did not need any assistance from public funds or that they did not feel justified in asking for it. The applications of four hospitals were approved by the Committee, and certain grants were sanctioned by the Voluntary Hospitals Commission on the recommendation of the Committee.

Schemes for Extension.—The advice of the Committee was sought as to schemes for extension or rebuilding of various hospitals in Surrey and was appreciated by the hospital committees.

Accounts.—Stress has been laid by the Committee on the importance of adopting a uniform system of accounts.

Conflicting Appeals.—The attention of the Committee had been called to the question of conflicting appeals. The formation of a central fund for provincial hospitals on the lines of King Edward's Hospital Fund for London, as proposed in the annual report for 1922 issued by the Joint Committee of the Order of St. John and the British Red Cross Society, was considered likely to be a useful method of avoiding competition and overlapping.

Finance.—The administrative expenses of the Committee during the past year, which have been met by the grants from the Surrey County Council and Croydon Borough Council, of £50 and £20 respectively, are estimated at £30, including the cost of the report, leaving a balance of £40.

THE WORK OF THE PENSIONS MEDICAL SERVICE.

II.* TREATMENT OF PENSIONED DISABILITY.

IN a foregoing article we dealt with the medical arrangements for determining the grounds on which are based the right to pension and the amount to be awarded. There are, however, other and many benefits for which the war-disabled, as occasion arises, are eligible.

Health, Training, and Employment.

Treatment for pensioned disability at the cost of the State includes all forms of in-patient, out-patient, and home-treatment, the supply and repair of artificial limbs and surgical appliances, and concurrent treatment and training. Under the provisions of the Naval and Military War Pensions Act of 1915 it became a function of the Statutory Committee of the Royal Patriotic Fund Corporation "to make provision for the care of disabled officers and men after they have left the service, including provision for their health, training, and employment"; the Act of 1916 creating a Ministry of Pensions placed the Minister in control of the Statutory Committee for the purposes of health, training, and employment; the Naval and Military

* Part I. appeared in THE LANCET of May 5th, p. 918.

War Pensions Act of 1917 dissolved the Statutory Committee and made the Minister directly responsible for all three functions; and finally the Ministry of Labour (Transfer of Powers) Order in Council in 1919 transferred training and employment to the Ministry of Labour except as regards officers and men whose training or employment, by reason of their war disability, required medical supervision or could not be carried out under ordinary industrial conditions.

Treatment Allowances.

The Royal Warrants define the conditions under which the Minister may incur certain expenditures, Art. 6 of the Warrant laying down the conditions which apply to cost of treatment and treatment allowances, or in other words the conditions of eligibility for these benefits. The procedure to be followed is set forth in detailed Ministerial instructions which differ in one important respect from the "Directions for the Guidance of Chairmen and Members of Medical Boards." These "directions," which are concerned with entitlement and assessment, request of the boards their free and unfettered opinion; whereas the "instructions" deal with procedure, the provision and cost of treatment, and the like, and are mandatory. Owing to the extraordinary variety of circumstance and case constantly arising, and to the involved relations of the medical department of the Ministry with the awarding, finance, and other branches, these instructions are so intricate that they can be successfully administered only by whole-time servants of the department. On this account the Ministry has created a whole-time medical service comprising at the present time 289 medico-administrative officials.

Nice Points for Determination.

The first point for determination is that the treatment recommended—whether by medical referee, medical board, or medical attendant—is for the pensioned disability. The Warrant lays down that where it is certified that a disabled man to whom a pension, gratuity, or final weekly allowance has been awarded, should in consequence of his disablement undergo any course of medical treatment and is deemed unable in consequence—that is, in consequence of his having to undergo a course of medical treatment—to provide for his own support and that of his family, "he may be granted, &c." No doubt, in many cases, simple documentary verification suffices to decide the question of eligibility for treatment; but where the pensioner requires treatment not for his disability in terms of, but "in consequence of" his disablement—and such cases now occur and will continue to do so in increasing number with mere efflux of time—questions arise demanding careful medical consideration.

Some Illustrations.—The questions for solution and the procedure following may be very different. For example, the man pensioned for nephritis who requires treatment for bronchitis is, naturally, in a very different position from the man pensioned for "myalgia" or "rheumatism" who is discovered to be suffering from tabes dorsalis. Indeed, in the latter case—which is, of course, a change of diagnosis—the originally conceded entitlement may be called in question and the case submitted to a medical board of reference. Again, of two men recommended for treatment for pulmonary tuberculosis, one pensioned for pleurisy with effusion and the other for bronchitis, one will have a much stronger claim to treatment and allowances at the cost of the State than the other, though in both substantiation by a medical board, following a fresh claim under Art. 9 of the Warrant, may be required. Examples of the nice points for determination which arise either as consequential disabilities or as changes of diagnosis might be quoted without end. Each calls, and often urgently, for treatment, and whilst everyone would deprecate too meticulous a dissection of any pensioner's disabilities—this disability being due to war service and that to post-discharge causes common to the civil population—it is evident that to hold the balance even requires a strong combination of clinical knowledge and experience of departmental precedent and Ministerial procedure. Every medical referee, member of a Ministry clinic, or hospital, shares in this responsibility, which officially falls to the deputy commissioner in medical charge of an area of the Ministry, whose approval is required before any recommendation of treatment is carried out. Through the close and friendly relations which subsist between these officials and the members of boards and clinics, a difficult task is being harmoniously accomplished with ever-increasing efficiency and with no increase of time in securing to the pensioner the most appropriate form of treatment.

Misapprehension sometimes arises as to eligibility for treatment allowances. Treatment allowances are not payable as compensation for inability to work on account of the man's disability, this being a function of the pension awarded, but are payable only when in consequence of undergoing treatment a pensioner is unable thereby to follow his remunerative employment. In such circumstances the rate of pension, whatever that rate may be, is raised to the maximum or total disablement rate, and appropriate allowances are made in respect of the man's wife and children.

Extent and Variety of Treatment.

Accurate statistics of the earlier years of the Ministry prior to its regional formation or reformation, are not readily available, but we are informed that during the year 1920, excluding pensioners suffering from tuberculosis and also ex-service men in asylums, more than 115,000 men received in-patient treatment either at the hand or at the cost of the Ministry, and over 250,000 out-patient treatment. During 1921 the in-patients numbered 105,000 and the out-patients over 258,000, whilst in the year 1922 the in-patients treated amounted to more than 85,000, and the out-patients 204,000. In round figures, therefore, some 264,000 in-patients were treated during these three years, as well as 531,000 out-patients, apart from officers and nurses. These figures do not include some 40,000 patients treated in sanatoria for tuberculosis during these three years on behalf of the Ministry of Pensions, nor the insane ex-service men in asylums who to-day number some 6000.

Special Hospitals.—Full use has been made of civil medical resources, mostly in the form of payment on a capitation basis coupled with a certain degree of supervision and control by the medical department of the Ministry; but early in the year 1919 it became apparent that for special purposes, particularly in cases of neurasthenia, special surgical, tropical and cardiological cases, and also certain cases of epilepsy, the Ministry should organise, maintain, and control the means of treatment. Ministry hospitals were therefore established in every region for these special cases. At the present time there are 37 such institutions with 10,047 beds. Of these institutions nine are for neurasthenic patients, and eight others have neurological sections. There is also one hospital with 300 beds reserved for epileptic cases. The total number of beds specially set apart in Ministry hospitals for special cases are: Neurasthenia, 2924; epilepsy, 300; dysentery, 235; limb-fitting, 161; general surgical, 4125. During 1922 more than 50,000 in-patients were treated in these hospitals. The Ministry has also established under its direct control a large number of special clinics, each administered by the D.C.M.S. of the area and staffed by approved specialists in their vicinity. These clinics not only give out-patient treatment, but carry out the duties otherwise discharged by medical referees.

No account of the treatment of the pensioner would be complete without mention of the work in connexion with the limbless at Queen Mary's Auxiliary Hospital at Roehampton, and a considerable number of limb-fitting centres distributed throughout the country, and of the important and profoundly interesting work of concurrent treatment and training. For pensions purposes everything that affects a man's disability is of importance and must be to some extent reflected in his pension.

ROYAL MEDICAL BENEVOLENT FUND:

ANNUAL MEETING, MAY 7TH.

THE annual meeting of the Fund was held this year in the Library of the Royal College of Physicians of London in order to mark the urgent nature of the appeal for the relief of distress within the medical profession.

Sir Thomas Barlow, the President of the Fund, in opening the proceedings summarised the objects and present position of the Fund—this has already been set out in THE LANCET of April 28th (p. 860)—and expressed the hope that every medical man in the country would take his share in relieving the burden of less fortunate fellow members, and that the larger public which appreciated its debt to the medical profession would help towards the same end. The financial statement and the report were then taken as read.

The Archbishop of Canterbury, in moving their adoption, said that laymen had only rare opportunities of expressing in a public manner their sense of the value of the services rendered to the whole community by the medical profession. Opportunities often occurred for cheering politicians, soldiers, and sailors, but he hardly knew of a single instance where the object of a gathering had been to cheer medical men. It was the duty of the public to help the medical profession in its difficulties and troubles in meeting the special emergencies due to hard times, for there was, perhaps, no class of the population upon whom the indirect results of the war pressed more heavily.

Lord Sumner, who seconded, said that the medical profession which was engaged in beneficent work found it difficult to put before the public their own needs, while the nature of the duties of that profession and the time occupied in performing them often precluded the medical man from making successful employment of the money he had, and from making adequate provision for the future. The working-classes were willing to make proper contributions in respect of medical assistance they received, and he thought that trade-unions might be appealed to for annual subscriptions to the Fund.

Sir Humphry Rolleston said that the medical profession was a relatively short-lived one, and many medical men were unable to make adequate provision for old age. Cases had come before the Fund where there were no means at all except the Old Age Pension. It was the duty of every medical man, according to his ability, to subscribe to the Fund, which at present received the support of only 7 per cent. of more than 7000 medical practitioners within the metropolitan area.

The financial statement and the report were then adopted unanimously.

Among those present at the meeting were Sir David Ferrier, Sir Dyce Duckworth, Sir William Hale-White, Sir Charters Symonds, Dr. Newton Pitt, Dr. Herbert Spencer, Dr. Arnold Chaplin, and Dr. J. H. Stowers.

STANDARDISED CONDENSED MILK.

THE Ministry of Health has made Regulations,[1] dated May 1st, under the Public Health (Regulations as to Food) Act, 1907, and the Milk and Dairies (Amendment) Act, 1922, entitled "The Public Health (Condensed Milk) Regulations, 1923," and has issued a circular[2] on the subject dated May 4th. The Regulations provide for a uniform method of labelling all tins containing condensed milk or condensed skimmed milk, whether sweetened or unsweetened, and specify the composition of the different varieties of condensed milk in terms of milk solids.

[1] Statutory Rules and Orders, 1923, No. 509, H.M. Stationery Office, price 2d.
[2] Circular 393, H.M. Stationery Office, price 1d.

Labelling.—All condensed milk is to be labelled with one of the four following declarations :—

> CONDENSED FULL CREAM MILK, UNSWEETENED.
> THIS TIN CONTAINS THE EQUIVALENT OF (*a*) PINTS OF MILK.

> CONDENSED FULL CREAM MILK, SWEETENED.
> THIS TIN CONTAINS THE EQUIVALENT OF (*a*) PINTS OF MILK, WITH SUGAR ADDED.

> CONDENSED MACHINE-SKIMMED MILK [or CONDENSED SKIMMED MILK], UNSWEETENED.
> UNFIT FOR BABIES.
> THIS TIN CONTAINS THE EQUIVALENT OF (*a*) PINTS OF SKIMMED MILK.

> CONDENSED MACHINE-SKIMMED MILK [or CONDENSED SKIMMED MILK], SWEETENED.
> UNFIT FOR BABIES.
> THIS TIN CONTAINS THE EQUIVALENT OF (*a*) PINTS OF SKIMMED MILK, WITH SUGAR ADDED.

The declaration is to be printed in dark block type of prescribed size on a light ground within a surrounding line which must contain no other printed matter. The label must also bear the name and address of the manufacturer or the dealer in the United Kingdom for whom it is manufactured. It is forbidden to place on the tin any comment, explanation, or reference in regard to the statement of equivalence, or to the words "machine skimmed," "skimmed," or "unfit for babies," or any instructions as to dilution unless they clearly specify that the resultant fluid is not of equivalent composition to milk or skimmed milk, or unless the resultant fluid corresponds in milk solids to milk of the standard set by the Regulations (see below). Wherever the word "Milk" appears on a tin containing condensed skimmed milk it is to be qualified with the words "Machine-skimmed" or "Skimmed." The statement of equivalence on the label is to be expressed in pints and fractions of a pint, and is to be in terms of milk containing not less than 12·4 per cent. of milk solids (including not less than 3·6 per cent. of milk fat), and skimmed milk containing not less than 9 per cent. of milk solids other than fat.

Composition of Condensed Milk.—The Regulations set the following standards :—

Description of condensed milk.	Percentage of milk fat.	Percentage of all milk solids, including fat.
Full cream, unsweetened ..	9·0	31·0
Full cream, sweetened ..	9·0	31·0
Skimmed, unsweetened ..	—	20·0
Skimmed, sweetened ..	—	26·0

The Regulations are to be enforced by the local authorities who have the appointment of public analysts, and the procedure of the Sale of Food and Drugs Acts in detecting and dealing with contraventions will be followed. At ports of importation the Regulations will be executed by the Customs authorities. Contraventions of the Regulations render the offender liable to a penalty not exceeding £100, and not exceeding £50 a day in the case of continuing offences.

All those interested in child welfare will welcome provisions which standardise the composition of condensed milk, and ensure that the purchaser obtains full information as to the value of the article bought. The Regulations are a useful check to misleading descriptions, which might with advantage be applied to many other foodstuffs.

Public Health Services.

THE HEALTH OF CAPETOWN.

THE annual report of Dr. A. Jasper Anderson, the medical officer of health for the City of Capetown, for the 12 months ended June 30th, 1922, constitutes an interesting record of the health of a considerable community of European race living under climatic conditions differing appreciably from those of English towns and side by side with a native African population. An indication of the climate during the year under review is afforded by the following records. In the hottest month, February, the mean maximum and minimum temperatures were 83·5° and 58·6° F., the highest and lowest readings being 96·4° and 48·9°, while in the coldest month, July, the mean maximum and minimum were 62·1° and 44·9°, the extreme readings being 75·5° and 38·0°. The earth temperature at a depth of four feet varied from 54·5° in August to 69·1° in March, and the rainfall for the year amounted to 24·15 inches. The hours of bright sunshine during the eight months October to May averaged 8·5 per diem. The influence of the varying seasons on health conditions would not appear to be great, the greatest number of European deaths in any one month (June) being 116, and the smallest (January) being 91. Next for mortality to the winter month of June came the summer month of February.

The population of Capetown is 186,050 and comprises 103,520 Europeans and 82,530 non-Europeans. From the statistics submitted by Dr. Anderson we select the following:—

—	European.		Non-European.	
	1913–14	1921–22	1913–14	1921–22
Population	76,940	103,520	74,560	82,530
Birth-rate	29·39	24·21	45·48	51·64
Death-rate	13·77	11·88	28·25	27·46
Infantile mortality rate.	107·96	69·03	250·54	176·44
Tuberculosis death-rate.	1·35	1·04	5·11	3·71

The European death-rate was lower than in any former year. When deaths of visitors are excluded (for Capetown is a favourite holiday resort in South Africa) the rate is only 10·63. The infantile mortality rate was much the lowest ever recorded, and the course of the mortality rates amongst Europeans must be a matter of gratification to those responsible for the health services of the city, and particularly for Dr. Anderson, who is so soon bringing to a close his long term of office as medical officer of health. His place, as we have already announced, will be taken by Dr. T. Shadick Higgins, medical officer of health for St. Pancras. The figures also show that the healthiness of Capetown compares favourably with that of English towns. The state of affairs amongst the non-Europeans is very different.

The city was fortunate in regard to most of the zymotic diseases during the year. There were no deaths at all from small-pox, measles, and scarlet fever, and, amongst Europeans, none from whooping-cough. There were 115 European cases of diphtheria (9 deaths). Enteric fever is the most troublesome of the zymotic diseases. Amongst Europeans it caused 260 cases with 27 deaths and amongst non-Europeans 244 cases with 46 deaths. There has already been an improvement in regard to enteric, and Dr. Anderson expresses the hope that it will be further reduced by the sewerage of the suburbs which is proceeding rapidly. Malaria and tropical diseases are conspicuous by their absence. The year's work of the health department includes 627 admissions to the city hospital, 15,097 attendances at the maternity and child welfare "bureaux," 1034 at the tuberculosis "bureau," and 8574 attendances at the venereal clinic. The report discloses that there are legal powers at Capetown for dealing with matters that might well be given more attention in this country. These include the licensing of butchers, vendors of fruit and vegetables, general dealers, hawkers, bakers, ice-cream sellers, hairdressers, mattress-makers, laundries, and bioscope entertainments.

SCHOOL MEDICAL SERVICE.

Sheffield.

DURING 1922, in spite of a reduction in medical staff, over 24,000 children underwent medical examination, and of these 19·5 were found to have one or more defects requiring treatment. For 95·2 per cent. of these treatment was obtained. Four of the schools have special rooms adapted to medical treatment, and school clinics are open all the year round without a break. The babies from the Maternity and Child Welfare Centre also make use of the school clinics for treatment. The total number of children dealt with here suffering from minor ailments was 6214. "The provision which the committee have been able to make for the dental needs of the school population is, unfortunately, totally inadequate. However, although there are thousands of children receiving no dental treatment at all, a larger proportion every year are availing themselves of the treatment." Dr. Thomas Chetwood reports that in the majority of cases of enlarged tonsils and adenoids, operative interference was not indicated; "in fact, much improvement may be expected from simpler forms of treatment." Over 900 children were found suffering from partial or complete deafness, and about 500 had some form of ear disease. A general increase of interest in crippling defects has resulted in extended facilities for orthopædic treatment; 35 such cases were treated during 1922, 23 of these being discharged before the end of the year. Unfortunately, classes for dull and backward children have not yet been established in this city. The two open-air schools are doing good work, and extension of both has been recommended. The children continue to do well, although the problem of procuring sufficient and suitable clothing is an ever-present one in spite of the generosity of teachers and the public. Indeed, the question of the quality, suitability, and cleanliness of school-children's clothing generally is a very serious one.

In the special inquiry by one of the assistant medical officers into the incidence of tuberculosis in elementary schools we find "unsatisfactory footgear implies poverty, and, as might be expected, the schools where the children are worse shod show a high rate of incidence." In spite of the fact that returns show a slight improvement in cleanliness and footgear during routine inspection it is evident that the chief superintendent of physical training, in his excellent appendix at the end of this report, comes nearer the mark when he says, "the quality of the clothing is rapidly deteriorating in poor districts owing to the distressing continuance of unemployment." It must be remembered that the standard of cleanliness at medical inspections is a spurious one. A school medical officer recently drew attention to the fact that unemployment and uncleanliness go hand in hand. He reported that depression in the labour market is always reflected in an increase of uncleanliness among school-children, just as periods of prosperity are marked by an improvement, not only in nutrition and clothing, but also in cleanliness, and school nurses working among large numbers of children will bear him out on this point. Another school doctor commenting on the increase of uncleanliness among school-children attributes the condition to "an apathy produced by unemployment that needed a more substantial remedy than moral persuasion." The whole question of cleanliness is a

question of pounds, shillings, and pence. Cleanliness means coal; coal means money. Cleanliness of home and clothing cannot be attained without hot water, a commodity inaccessible to the poorer classes without coal. The whole question of the comfort of the working classes inevitably revolves round hot water, or, in other words, coal. Money is spent first on the necessities of life, food and the means of cooking it, and only the surplus after this is deducted is spent on cleanliness either of clothing or body. Consequently cleanliness inevitably varies inversely with prosperity. Poverty primarily shows its effect on cleanliness, and eventually on nutrition. It is unfortunate, then, that at a period of unemployment such as this, Sheffield should find it necessary in the interests of economy to close the school baths. Three of the four school baths have been closed, and as Dr. Chetwood, who deplores such a measure, points out, the facilities for bathing at home are sadly lacking. By removing the facilities at school, small as they were, the education authority connects up, as this report demonstrates, a vicious circle of uncleanliness, neglect, and disease.

The superintendent of physical training, commenting on the development of school games in the elementary schools, recalls the fact that some years ago the number of games played in most school playgrounds was under ten. Often the same games were played by seniors and juniors alike, most of them being too hard for the juniors and too easy for the seniors; now most teachers arrange a progressive syllabus of games. The value of this for the mental development of the child, apart from its effect on his physical development, is obvious. The number of sports clubs connected with the city is rapidly developing, which goes to point out that the early training is bearing fruit, and the young men and women are becoming players instead of merely watchers.

Shrewsbury.

In this compact report of work done Dr. Gordon Smith remarks that the number of cases examined under the code groups is not large enough to form a basis for statistics, but is quite large enough to give a general indication of the conditions prevailing among school-children. The results of medical examination vary considerably with the home environment of the child, bearing out to a large extent what has been actually proved by the nutrition clinics in America. The percentage of dirty and verminous children in Shrewsbury has increased, and the school medical officer attributes this to loss of self-respect among parents and children owing to bad housing conditions, unemployment, and consequent scarcity of food. The clothing and footgear of the children have suffered, too, in spite of the fact that the borough police have given away hundreds of pairs of boots to necessitous children. Impetigo and ringworm have increased considerably as a natural consequence of poverty following upon unemployment. Dr. Smith notes also that the percentage of dull children has increased, and suggests that the lack of food and proper attention is reacting upon the mental condition of the children. Bronchial catarrh, a common enough condition among children badly fed and housed, also shows an increase. Out of 1249 children inspected at routine inspections, 126 were suffering from malnutrition. Out of the 93 children requiring treatment, 60 availed themselves of the ample facilities provided for treatment. Parents appear to object very little now to having operative treatment for enlarged tonsils and adenoids, but they have not yet grasped the importance of having defective eyesight remedied. The question of dental treatment, too, raises few objections, and 257 children were treated by the school dentist, only 21 failing to attend. Dr. Smith attributes the success of the dental clinic to the school dentist, who has done much to popularise the clinic by his gentle way with the children. A plea is put forward for special consideration for mental defectives, most of whom attend the elementary school, where they handicap both teachers and taught.

Gillingham (Kent).

During the year 3857 children were medically inspected, 2253 coming under the code groups. There was not one case of malnutrition found, and only one of rickets, although 315 special cases were found to have unclean heads. After routine inspection 365 were found to require treatment, and 83 special observation; 210 received treatment. Disease of nose and throat accounted for 118 children requiring treatment, and defective vision for 107. Gillingham is a healthy borough for children. In addition to the practical absence of malnutrition and rickets, there was not one case of defective hearing recorded, although routine inspection revealed 65 with ear disease; nor was there apparently a single case of eye disease, or of enlarged cervical glands (non-tuberculous), although 114 were found on routine inspection to have enlarged tonsils and adenoids, and medical inspection revealed 120 cases of dental caries. After the dental inspection of 2055 children, 366 were referred for treatment, 214 of these being treated. Dr. W. A. Muir, who was appointed school medical officer as recently as September, 1922, as successor to Dr. E. C. Warren, puts on record his indebtedness to the school nurses in carrying on the work of the department.

The Services.

ROYAL NAVAL MEDICAL SERVICE.

Surg. Comdr. D. P. Chapman is placed on the retd. list at his own request.

Surg.-Lt. J. S. McGrath to be Surgeon Lt.-Comdr.

ROYAL ARMY MEDICAL CORPS.

Lt.-Col. and Bt. Col. J. S. Bostock is restd. to the estabt.

Maj. J. W. Kynaston, on relegation to the retd. list, is granted the rank of Lt.-Col.

TERRITORIAL ARMY.

Capts. J. B. Orr and J. C. Knox (late R.A.M.C.) to be Capts.

Capt. J. A. Mathers resigns his commn. and retains the rank of Capt.; and Lt. D. R. Wheeler resigns his commn. and retains the rank of Lt.

The undermentioned relinquish their commns.: Temp. Capt. O. W. Gange, and retains the rank of Capt.; Temp. Hon. Capt. H. A. Haskell, and retains the hon. rank of Capt.

General Hospitals: Capt. B. A. Lloyd relinquishes his commn. and retains the rank of Capt.

The undermentioned, having attained the age limit, are retired and retain their rank, except where otherwise stated: Lt.-Cols. Sir J. Barr and A. B. Gemmel (Bt. Col.), F. A. Southam; Majs. F. T. Paul, R. W. Murray, J. Utting, P. Davidson, J. M. Beattie, and R. A. Bickersteth; Capts. J. R. Logan, J. M. Hunt (granted the rank of Lt.-Col.), F. C. Larkin, D. Douglas-Crawford, J. L. Roberts, C. T. Holland (granted the rank of Maj.), R. J. McL. Buchanan, W. Fingland, J. Hay (granted the rank of Lt.-Col.), T. R. W. Armour (granted the rank of Maj.), L. A. Morgan, K. W. Monsarrat (Bt. Maj.) (granted the rank of Maj., with permission to wear the prescribed uniform), A. J. Evans, E. E. Glynn, E. Stevenson, and W. C. Oram.

TERRITORIAL ARMY RESERVE.

Majs. R. Griffith (Bt. Lt.-Col.) and W. D. Sturrock, from Gen. List, to be Lt.-Cols.

Maj. G. A. C. Shipmen, from 4th Northern Gen. Hospl., to be Maj.

Capt. J. G. Morrin, from Gen. List, to be Capt.

Capt. F. G. Armstrong, from 1st Northern Gen. Hospital, to be Capt.

DONATIONS AND BEQUESTS.—Dr. Donald Peter Maclaren Farquharson, medical officer of health for Radcliffe, left £1000 in trust for the clothing of necessitous Radcliffe school-children, and for sending the delicate ones to the seaside.—Towards the Lord Mayor's appeal for 2,000,000 shillings for the hospitals and infirmaries of Manchester, Salford and District, a first list of donations is published showing subscriptions received or promised amounting to £20,000.

Correspondence.

"Audi alteram partem."

SERUM DOSAGE IN DIPHTHERIA.

To the Editor of THE LANCET.

SIR,—I have read with interest Dr. C. B. Ker's paper and the instructive correspondence that has ensued. In the main I agree with Dr. Ker's views and approve of his method of dosage. I cannot see, as some seem to think, that he has done anything very wrong when he advises smaller initial doses, say of 4000 units, for milder attacks, and 8000 for severer forms. Personally, I have used doses of these amounts, and have never varied them, for the last 20 years, and the death-rate in this hospital will compare favourably with that of any other, although for the last two years it has shown a tendency to rise. But, if there is any doubt about the practitioner not being able to distinguish in the early stages the mild from the malignant cases, then it seems to me that that difficulty can be got over by advising initial doses of 8000 in all cases. But there is no need that the hospital medical officer should follow suit. He can, as the result of his experience, distinguish the malignant from the mild forms of attack, so that there is no reason why he should not decide upon the smaller dose. In the past heroic doses have been given which, it is now generally recognised in this country, do not accomplish more than the moderate doses such as Dr. Ker advises. As regards the method of administration, I have found no very marked benefit from the intravenous route.

With Dr. E. W. Goodall's assertion that "if patients are brought under treatment early—that is, on the first or second day of disease—they nearly all recover," I am afraid I cannot agree. My experience is that in the virulent forms of present-day attacks the chances of recovery from the very onset are of the poorest. I entirely agreed with regard to Dr. B. A. Peters's statement that diphtheria has suddenly altered in type in recent years. It has been noticeable in this district since 1920, and, as a matter of fact, I drew attention to its increased severity in my annual report for that year.

But, before going any further into this matter of dosage, would it not be as well to look at the whole question from a different point of view. Have we not got to that stage where we might ask: "Is diphtheria antitoxin all that we believe it to be?" I myself think there is reason to doubt it. Certainly many fatal cases which have been admitted to this hospital in recent years, several of which came in on the first and second day of disease and were given antitoxin intravenously, endorse this view. No doubt most would attribute the fatal issues in these cases to the exceptional virulence of the attacks, and that very likely is so; at the same time we ought not to forget that possibly the real cause was the fact that the antitoxic value of the serum was relatively low. I understand that diphtheria antitoxin is standardised by testing its power on guinea-pigs against the toxin of the most virulent culture of diphtheria organisms that can be obtained from any part of the world. This culture comes from New York and has been in use for over 15 years. Is there any evidence that this culture is of the same strain, or that it equals the virulence of some of the infections present in malignant attacks now so common in certain parts of this country, or that as the result of subculture over such a period of years this New York organism has not undergone material change?

Recent investigations with regard to the pneumococcus show that there is more than one strain of this organism and that each requires its own antiserum, the active principle of which is possibly an antitoxin. Similarly, clinical experience indicates that there is more than one strain in diphtheria, and, if it is so, might it not be that these different organisms produce toxins different in virulence and different in their serological reactions, and that for their neutralisatjon they require different antitoxins. If this is the case, does it not explain the failure of present-day antitoxin to deal alike with mild and severe attacks of this disease, and does it not suggest the lines of preparation along which the manufacture of our standard anti-diphtheritic sera must take. In other words, we require a composite serum which will counteract the toxin of all strains.

Presuming that it is possible to prepare a serum of this nature, and I am anxious to try a serum made from local strains, I think it would clear up the whole question of dosage and help to remove the divergence of opinion which seems to prevail in connexion with the amount of the initial dose.

I am, Sir, yours faithfully,

W. J. J. STEWART.

Municipal Hospital, Neasden, N.W., April 23rd, 1923.

To the Editor of THE LANCET.

SIR,—May I be permitted to add my quota of experience, small though it may have been compared with that of those who have already expressed themselves in these columns. I would confine myself to a few remarks on the serum treatment of naso-pharyngeal diphtheria, based on a short series of cases met with during the winter 1920–21 at the Croydon Borough Isolation Hospital. In view of the high mortality usually noticed in this type of case it was decided to submit a series of some thirty cases to intravenously given serum. This series comprised practically all such cases met with during the period in question, no special case selection taking place. The procedure consisted in giving each case as soon as possible after admission 8000 to 10,000 units of heated antitoxin intravenously, though later on in the series half that amount of serum which had been given intravenously was also given intramuscularly. The results were, from the beginning, almost striking: membrane could be seen separating within an hour or two after injection, whilst a profuse nasal discharge dried up overnight. I would add a point, which appeared to me to be of some significance, that cases improved in proportion to the time of onset of reaction, a rigor at or soon after injection indicating a good prognosis. Fatal cases invariably failed to respond in this way.

The death-rate in the above unselected series was remarkably low—13·3—compared with that usually obtaining in this particularly virulent variety of the disease, which may be said to vary from 40 to 60 per cent. or upwards. Intravenous medication, I believe, necessary only in this type of diphtheria, combined to obtain the full benefit of treatment with intramuscular injections of smaller amounts of serum.

I am, Sir, yours faithfully,

K. SIMPSON, M.D.

Town Hall, Croydon, April 28th, 1923.

To the Editor of THE LANCET.

SIR,—Dr. C. B. Ker, in referring (THE LANCET, April 28th) to the severe type of diphtheria, of which Dr. B. A. Peters wrote, says: "I doubt very much if even 8000 units as advised by Dr. Thomson would do any more good than my own smaller doses." I am quite certain Dr. Ker has no desire to misquote me in saying this, but he has done so, for in my letter in your issue of April 7th my argument was that if 8000 units as a minimum dose was both safe and efficient, then certain results would follow. It was not I who said that 8000 units as a minimum dose was both safe and efficient, but Dr. Ker himself. In his note on serum dosage in diphtheria, in your issue of March 31st, he says: "The advisers of the Ministry of Health recommend that a dose of 8000 units should be given immediately in any case provisionally diagnosed as diphtheria. We may admit at once that such a procedure is both safe and efficient."

In further reference to the very severe type of diphtheria to which Dr. Peters refers, Dr. Ker says

he thinks serum does as little good in such cases as it does in the hæmorrhagic type, which, even if treated early, seems invariably to be fatal. I cannot understand how Dr. Ker makes such a statement, and I can only hope I have mistaken his meaning, for in my experience the very severe form of diphtheria referred to by Dr. Peters almost invariably recovers if treated with adequate doses on the first day of the disease. By adequate doses I do not mean 10,000 or 15,000 units, but 30,000 up to 60,000 units.

I am, Sir, yours faithfully,

FREDERIC THOMSON.

North-Eastern Hospital, S. Tottenham, April 28th, 1923.

To the Editor of THE LANCET.

SIR,—May I say in reply to Dr. F. E. Tylecote that, although I formerly gave larger doses to patients admitted late in the disease, it is difficult to see what can be gained by such a procedure if we cannot hope to detach toxin which has entered into combination with tissue. Even when large doses are given the death-rate rises with each day that the first dose has been delayed, which seems to suggest that the damage done in the early days is irreparable. It is very difficult to estimate the severity of different types of disease in different places and comparison is almost impossible. All I can say is that our death-rate in Edinburgh has varied of late years much as that of Dr. Peters in Bristol. For the last two years it has been only 6½ per cent; before that it varied from 8 to 10 per cent. for some years. But perhaps this may be attributed to under-dosage, although our severe cases receive, as a rule, 40,000 units within about 24 hours of admission. I cannot help feeling that many of us give large doses because we are afraid to give small ones, and yet the difference in results from the days of the small dose is very slight, as all who witnessed the introduction of antitoxin treatment will, I think, frankly acknowledge.

I am, Sir, yours faithfully,

CLAUDE B. KER.

City Hospital, Edinburgh, April 27th, 1923.

FOURTH INTERNATIONAL CONGRESS OF REFRIGERATION.

To the Editor of THE LANCET.

SIR,—As secretary of the Papers Committee, Commission I. of the Fourth International Congress of Refrigeration, I have been requested to approach you with the object of obtaining your assistance to get into touch with members of the medical profession who would be willing to contribute any papers on the uses of artificially produced cold with regard to medical research and practice. The following is a list of subjects to be discussed at the Congress:

Verification of experiments undertaken before the war by the Russian scientist, Bakhmetieff, relating to the action of cold on living organisms. Cryotherapy in the treatment of certain skin diseases. Use of refrigeration in anatomy. The action of refrigeration for the amelioration of opotherapy; corresponding refrigerating installations. Biological study of milk preservation by refrigeration; bacteriology of ice-cream. Biological study of chilled and frozen produce (meat, fish, eggs, vegetables, fruits, &c.). Use of frozen eggs in food preparation; bacteriological examination. Refrigeration by the circulation of defibrinated blood. Refrigerating installations in hospitals and dwelling-houses. Operation and maintenance of refrigerating installations from the point of view of health and hygiene. Handling of frozen produce. Moulds in cold stores, and the means of combating them. Moulds in meats and other frozen produce. In addition, Mr. d'Arsonval proposes to contribute a report on the Preservation of Serums and Vaccines by Refrigeration.

Any help you could give in the matter would be highly appreciated. The Congress is to take place in London about June, 1924.

I am, Sir, yours faithfully,

JOHN D. FARMER.

Dartford Iron Works, Dartford, Kent, May 3rd, 1923.

L'AFFAIRE SPAHLINGER.

To the Editor of THE LANCET.

SIR,—Beginning in 1915, I treated, with Mr. Henry Spahlinger's method, 294 cases of tuberculosis, mostly pulmonary. The serum was used in 189 cases and the vaccine in 105 cases of a less acute type. These patients had not responded to ordinary methods of treatment. It has been difficult to compile exact statistics for the following reasons: (1) I have had to work only with partial sera and partial vaccines; (2) these were intermittently supplied; (3) during certain periods I have been obliged to use sera three or four years old; (4) in order to economise the antitoxins, so difficult to secure, I have often employed them during only a short period, to check acute symptoms or to arrest a new outbreak or a rapid extension of the disease; (5) supplies were too limited and frequently insufficient for the prolonged treatment necessary for the very grave cases I had in hand. The result was that patients have often left much improved instead of being clinically cured, as would probably have been the result if I could have continued the intensive treatment. Under these conditions it is evident that statistics cannot show the real value of Mr. Spahlinger's two specifics.

In 1919–20 I selected from 300 sick Russian prisoners 50 very severe cases, most of them suffering from pulmonary tuberculosis, some complicated by secondary tuberculous lesions of the larynx, abdomen, and joints. With a fairly complete series of fresh partial sera then available I obtained 82 per cent. of recoveries, enabling the patients to return to work, 12 per cent. remained stationary, and 6 per cent. died. Of the 189 severe cases treated with partial serum 80 per cent. show favourable results (complete recoveries or arrest of the disease). Of the 105 cases of a less acute type, who were treated with partial vaccines, 77 per cent. were cured or much improved and 23 per cent. little or not influenced. It is important to note that the vaccines were employed only when the evolution of the disease had not responded to the ordinary methods of treatment, including aerotherapy and altitude. Therefore taking the whole of the 294 cases, the positive results are: 80 per cent. for the serum and 77 per cent. for the vaccine.

Statistics compiled under the difficulties to which I have referred are possibly of less value than observations made from study of cases such as those which I append. My experiences clearly demonstrate the importance of a large *polyvalence*, requiring over 20 different partial sera, the combination of which is found to be indispensable in order to treat with success the different toxic manifestations of the disease. I have employed in the treatment of my patients three different types of partial antituberculous sera: antitoxic, anti-endotoxic, and antibacterial, all three polyvalent. In advanced or acute cases of tuberculosis antitoxins are required in order to neutralise the toxins and to support, by passive antitoxic immunity, an organism which cannot sufficiently defend itself. Symptoms of intoxication, such as pyrexia, profuse perspiration, vomiting, anorexia, &c., I have found to yield in a few weeks, if the patient's resisting power can be supported with sufficient polyvalent antitoxin.

Surgical cases are most successfully treated with a mixture of anti-endotoxic and antibacterial sera. They induce a much more rapid recovery than other treatments, such as the sun-cure. It is of advantage to inject the surgical sera directly into the foci. Numerous experiences have shown that the antibodies do not invariably suffer from alteration through the gastric juices when taken by mouth fasting. I have found that serum given by mouth during the night is most effective in some cases of tuberculosis of the intestines, while other similar cases do not appear to respond to the treatment by mouth.

When a partial serum (for instance, No. 2) which, in certain cases, produces favourable results was replaced by another partial serum (for instance,

No. 3), even if chosen from the same type such as antitoxins, the patient at once stopped improving and the progression of improvement only recommenced when the successful serum No. 2, which was first employed, was resumed. Yet the ineffective partial serum No. 3 had given most beneficial results in other forms of tuberculosis. These experiences have been made many times with the different partial sera, and they establish the importance of the polyvalence of the serum.

I have never had the complete vaccines, as used in 1913–14; only partial vaccines have been at my disposal. The patients who have recovered by means of these partial vaccines cannot be considered as immunised and thus prevented from any relapse. I have come to the conclusion, however, that Spahlinger's partial vaccines produce undeniable curative effects. They are most helpful in completing the recoveries of patients who, with the assistance of the serum, have overcome an acute condition. I have used the partial vaccines alone in afebrile pulmonary and in all forms of surgical tuberculosis. The temperature reactions, which sometimes take place immediately after the injections (especially after the strong solutions), are harmless and quickly disappear. These vaccines have never produced a flare-up of the disease with lasting high temperature.

It should be noted here that surgical cases can be successfully treated either by anti-endotoxic and antibacterial sera, or by vaccine. The immediate results of the serum, especially when injected in or near the tuberculous lesions, are more rapid; but there is always a possibility of recurrence of the morbid symptoms after the treatment has been stopped. With vaccine the improvement does not commence so quickly and only becomes noticeable when the patient has attained a certain degree of immunity. The results, however, are of a lasting nature. It is therefore advisable to treat surgical cases with vaccine alone when available.

Descriptive Cases.

CASE 1. *Mr. M. O.*—Affected with tuberculosis of the sternum, with large collection of pus. T.B.+. Had been operated upon in Germany three times without benefit. During the summer of 1919 I treated this patient for two and a half months with an all-day long sun-cure. At the beginning this big lesion appeared to close up superficially, but it was suppurating internally, and again we had to draw off the pus, proving that the sun-cure was ineffective. Following Mr. Spahlinger's suggestions I injected antibacterial partial serum Nos. 5 and 21 deep into the abscess itself and also into its periphery. This treatment was continued for a few weeks. It led to the gradual disappearance of the infiltrated foci, to the drying up of the fistulæ, and effected a cure which proved to be of a lasting character.

CASE 2. *Mr. M. T.*—Patient had been suffering for a year with profuse hæmoptysis. In August, 1919, chest examination showed total infiltration of left lung and of right base, with acute softening of left apex. Also abdominal tuberculosis. No appetite, violent abdominal pains, vomiting, temperature 39°C., rapid emaciation (7 kilos during the last four weeks). T.B. in sputum and stools. His condition appeared too severe to permit of a therapeutic treatment being attempted. Nevertheless, I started injections of antitoxins, but as patient's condition was extremely critical I administered also by mouth a partial serum which had previously shown itself most efficacious for intestinal lesions. In one week vomiting and abdominal pains disappeared, temperature became normal. In a month and a half the weight had increased by 8 kilos and disease appeared to be arrested. The serum was then stopped, but pulmonary and abdominal symptoms reappeared gradually, and four months after they were acute once more. Serum treatment was resumed, and 20 days' treatment with the same partial serum, given by mouth, was necessary before the symptoms commenced to diminish. I then continued to give the serum by mouth and by injections without stopping, and by the end of 1920 a cure was obtained with a gain of 10 kilos in weight. Since then the recovery has been maintained.

CASE 3. *Mr. J. F.*—Had previously had sanatorium treatment, but with no definite results. Cavity at left apex with acute softening of the surrounding areas, massive infiltration throughout the whole of left lung, widely disseminated miliary disease in right lung, abdominal tuberculosis (violent pains, tympanism, vomiting), bilateral epididymis, with seven suppurating fistulæ, lupus lesion on nose, high temperature, pulse 129, numerous T.B. in sputum, very profuse night sweats, emaciation (2 st.), condition of collapse, all symptoms showing a generalisation of the disease. A fatal prognosis within a very short time was given by the physicians who examined him at that period. The Montana altitude treatment having failed to improve this patient, and his condition becoming rapidly worse, injections of three partial antitoxins were started in May, 1921. Injections of 2 c.cm. of a mixture of these three partial sera for 13 days reduced temperature to 38°C. This treatment was continued for a further period of 20 days and brought the temperature to normal. The T.B. number in sputum decreased in two months from 60 per cent. to 20 per cent., and in the following two months to 8 per cent. The antitoxic treatment had dried up the cavity and stopped the digestive troubles. The patient's weight increased by 9 kilos. The profuse suppuration from the bilateral epididymis having not been influenced by the antitoxins, antibacterial serum was then added to the antitoxins. It rapidly stopped the discharge and reduced by 75 per cent. the tumefaction of the testicles. The lupus lesion had disappeared. Five months after I added to the antitoxic and antibacterial sera some partial vaccine in order to create an active immunisation. This man, who was dying at Montana early in 1921, has now been working since the beginning of this year.

CASE 4. *Mr. H. J.*—Tuberculosis of the lungs since 12 years, with hæmoptysis and occasional rises of temperature. In 1920 I found a slight infiltration throughout left lung. Temperature normal; 2 or 3 T.B. per field. Patient debilitated. For ten months various treatments, such as creosote, tuberculin, Dr. Rous's angyolymphe, and other supposed specifics, were tried to improve this stationary case, but unsuccessfully. I then tried Mr. Spahlinger's partial vaccines. Some of the injections were followed by a rise of temperature to 39°C., which lasted a short period, never exceeding 48 hours, without producing any alarming focal reactions. Gradually all symptoms of activity disappeared, and physical signs became quite dry. The occasional spells of pyrexia with stained sputum or hæmorrhages completely ceased, and the general condition became quite satisfactory. Seven months from the beginning of the vaccine treatment patient started work again, and the cure appears to be perfectly lasting.

I have had many similar cases. These partial vaccines, although they cannot protect a patient against a possible relapse, are very active in improving and curing chronic cases and in consolidating improvements obtained by means of the sera.

Basing my statement on 28 years' experience of tuberculosis and on the last eight years' work with Spahlinger's specifics, I come to the following conclusions:

(*a*) The serum has a remarkable antitoxic action.
(*b*) Each partial serum is effective in some form of tuberculosis.
(*c*) A polyvalent serum is necessary to obtain a high percentage of recoveries in acute or advanced stages of the disease.
(*d*) This serum treatment can be successfully applied to the most severe cases, when no other means could produce any results.
(*e*) The partial vaccines have a marked curative effect.

I am, Sir, yours faithfully,

May 1st, 1923. D. TH. STEPHANI.

THE TEACHING OF OBSTETRICS.

To the Editor of THE LANCET.

SIR,—In your summary of Dr. Janet Campbell's report to the Ministry of Health on the Teaching of Obstetrics (THE LANCET, April 28th, p. 869) it is stated that St. George's Hospital (amongst others) has no maternity beds. Although this was correct at the time the report was presented, I would point out that this hospital now has a fully equipped maternity ward of ten beds, and I should be glad if you would insert this in your journal so that it may be as widely read as, I have no doubt, was the article in question.

I am, Sir, yours faithfully,

F. J. FRANKAU,
May 4th, 1923. Deputy Treasurer, St. George's Hospital.

*** We noted that provision of maternity beds was under consideration, and are glad to learn that it was so promptly made.—ED. L.

TUBERCULOSIS OF SACRO-ILIAC JOINT.

To the Editor of THE LANCET.

SIR,—Your correspondent, Mr. P. B. Roth, in his letter to THE LANCET of May 5th points out that my paper on sacro-iliac tuberculosis must have been written prior to the publication of Dr. A. Rollier's "Heliotherapy"; and he questions, first, the rarity of the disease in view of the 83 cases mentioned by Dr. Rollier, and secondly, the necessity for the radical treatment advocated by me. Mr. Roth is quite correct in his surmise: the paper was written early in 1922 and read at the Liverpool Medical Institution in October of the same year. Nevertheless, in spite of the subsequent publication of Dr. Rollier's book and Mr. Roth's gentle criticism, I maintain the statements in my paper, for the following reasons:—

Whitman, quoting the statistics of the Hospital for Ruptured and Crippled during a period of 20 years, gives the following figures for tuberculous disease: spine, 4299; hip, 3329; all other joints, 3222; these figures certainly appear "impressive" when compared with those for sacro-iliac tuberculosis. Later on he says, "Tuberculous disease of the sacro-iliac articulation as compared to disease of the spine or hip-joint is a rare affection and extremely so in childhood." This view is shared by other authors. Dr. Rollier's book not being available at the moment, I am unable to settle the important question as to whether the diagnosis of tuberculosis was verified in all his cases by the finding of the *B. tuberculosis*, especially in those without sinuses.

With regard to Mr. Roth's second point, the necessity for operation, I should like to quote the following extract from your review of Dr. Rollier's book:—

> "Routine operative treatment has been entirely abandoned, except for unilateral renal disease and for cases showing large inabsorbable sequestra, while in closed joint lesions practically the only excision that is ever advised is that of the knee-joint in rare adult cases where the disease is very torpid and ankylosis inevitable."

Now in describing the pathology of the disease I pointed out that sequestra are common (the one in my case measured 1½ in. diameter), and that intrapelvic abscess is commoner than extrapelvic, two conditions which appear to call for operation. Finally, it must be admitted that the cold dry air and bright sunshine required for heliotherapy are unfortunately conspicuous by their absence over the greater part of this island, and for the poorer classes at any rate the high Alps are inaccessible.

I am, Sir, yours faithfully,

Liverpool, May 5th, 1923. H. C. W. NUTTALL.

DYSMENORRHŒA A SYMPTOM.

To the Editor of THE LANCET.

SIR,—Many distinguished gynæcologists from various parts of Great Britain took part in the discussion on dysmenorrhœa introduced by Prof. Blair Bell at the recent meeting of the British Congress of Obstetrics and Gynæcology. If Dr. Lamond Lackie, who presided jointly with Dr. Herbert Spencer, is reported rightly in THE LANCET of April 28th, he referred in summing up to the "enormous diversion of opinion between various speakers. Apparently," he said, "we were disagreed about the frequency of dysmenorrhœa, its causes, and its classification, and its possibility of cure."

This is a very unfortunate state of affairs, and is probably due to trying to make out of a single symptom—namely, pain in association with menstruation—a disease. Prof. Blair Bell quoted Marion Sims, who in 1880, he said, had first insisted that dysmenorrhœa was a symptom and not a disease, a point of view which no one disputed to-day. This appears to have been the only statement practically in which there was unanimity of opinion, as no one present appears to have dissented from it. Indeed, no one could dispute the statement, for it is a fact beyond dispute. Why not, therefore, drop altogether the term dysmenorrhœa, or at least not speak of it as a disease, but merely as a symptom of many pathological conditions in well-recognised diseases associated with the female genital organs, and certain constitutional states, such as neurasthenia. Only the week previous to the publication of the proceedings of the Congress an article appeared in THE LANCET on the Treatment of Primary or Spasmodic Dysmenorrhœa, by Dr. G. F. Blacker. But Prof. R. J. Johnstone, of Belfast, in his remarks at the Congress said he was very glad that Prof. Blair Bell had made a clean sweep of the old terminology of congestive and spasmodic dysmenorrhœa.

Dysmenorrhœa is a symptom, and should be treated as such, and such only. Dr. J. S. Fairbairn, in his remarks, said he wished to observe that no uterus was made to pattern, and simple variations had not been taken into account. Surely the uterus is made to pattern, and that pattern is what the consensus of recognised opinion has defined as the normal uterus, and the variations from the normal, such as under-development, acute ante-flexion, and the like, are the very conditions which are associated with painful menstruation. The factor of pain in such conditions should be dealt with in text-books of gynæcology under their respective headings, and dysmenorrhœa not given a special chapter as if it constituted a disease in itself. If this plan were adopted it would at once do away with all such terms as intrinsic, extrinsic, congestive, spasmodic, membranous, and ovarian dysmenorrhœa.

I am, Sir, yours faithfully,

Bentinck-street, W., May 1st, 1923. F. L. PROVIS.

THE TREATMENT OF STAMMERING.

To the Editor of THE LANCET.

SIR,—In the London County Council report of the classes for stammering children, issued under the Public Health Department for 1920, it is stated that 50 per cent. of the cases treated were discharged cured. Dr. E. W. Scripture stated in his paper[1] that not more than 5 per cent. of treated cases ever fully recover. Although the pathology of stammering has never fully been established, I think a lot more might be done to systematise the treatment; there are still many unqualified men treating stammerers and the percentage of cures is not as large as it should be. It is clear to me, after my experience, that stammering is definitely a neurosis, caused by a congenital tendency, a predisposition, reacted on and made virulent by an external cause—e.g., shock, fear, unfavourable environment. In the X ray Department at St. Thomas's Hospital it was proved that every stammer is accompanied with defective movement of the diaphragm, resulting in bad breath control, poor voice, and so on. As in so-called shell-shock, the repression of fear leads to defective coördination; faulty speech movement is the result. A feeling of opposition may in certain cases be the cause of stammering, when the environment is unfavourable; but about 60 per cent. of the 500 cases of stammering I had through my clinics in London were caused by the shock of air-raids, the repressed emotion causing defective coördination. Surely stammering can here be classed with other forms of neurosis and treated as such. A stammerer certainly needs treatment, both mental and physical, but cannot the two be amalgamated? Exercises for breath control, relaxation, the cultivation of the melodious voice should be taught in such a way as to give the right suggestion in confidence, self-assertion, and control. No stammer can be permanently cured by tricks; a stammerer already feels different from his enviromnent, and the treatment should make him feel normal. He has to be given the means of free self-expression by speech, the natural and normal method, but as yet I do not feel we have discovered the quickest way of giving that self-expression.—I am, Sir, yours faithfully,

MURIEL H. WIGGLESWORTH,
Late of St. Thomas's Hospital Speech Clinic and
April 27th, 1923. the L.C.C. Stammerers' Clinics.

[1] THE LANCET, April 14th, 1923, p. 749.

Medical News.

UNIVERSITY OF CAMBRIDGE.—A short course for the diploma in Psychological Medicine has been planned to be held in Cambridge from July 10th to August 17th. The subjects covered will be the physiology and anatomy of the nervous system, psychology, psychopathology, mental deficiency, and practical psychiatry. Attendance at separate lectures can be arranged. Applications to attend the course should be sent before June 7th to the secretary, D.P.M. Committee, Psychological Laboratory, Cambridge, from whom further particulars can be obtained. If a sufficient number do not apply the course will not be held.

UNIVERSITY OF OXFORD.—Degree days in the present term are May 26th, June 21st and 28th, and July 7th.

Rolleston Memorial Prize.—The next award will be made in Trinity Term, 1924. The prize is now of the value of about £100, and is awarded for original research in any subject comprised in the following list: Animal and vegetable morphology, physiology and pathology, and anthropology. Candidates must forward their memoirs to the registrar of the University of Oxford before March 31st. The memoirs may be printed, typewritten or in manuscript; should be inscribed "Rolleston Memorial Essay," and should bear the name and address of the author. No candidate will be eligible: (1) Who has not either passed the examinations for the B.A. degree or the B.M. degree at Oxford, or for the B.A. degree or the M.B. degree at Cambridge, or been admitted as a candidate for the degree of B.Sc. at Oxford, or as an advanced student for the degree of B.A. at Cambridge; (2) who has exceeded a period of six years from attaining one or other of these qualifications, or from his attaining the first of such qualifications, if he has attained more than one; (3) who has exceeded ten years from his matriculation.

UNIVERSITY OF LONDON.—The report of Sir E. Cooper Perry, the principal officer, on the work of the University during the year 1922–23, shows the vigorous progress being made by the University. The total admissions by all channels amounted to 8498, compared with 3852 in the last year before the war and 7092 in 1921–22. The total number of candidates for all examinations was 30,839, against 11,920 in 1913–14 and 27,237 last year. Of the 3191 candidates for degrees, 2013 were internal and 1178 external. In the last year before the war, of 1807 such candidates, 900 were internal and 907 external; and in 1921–22 the candidates numbered 2455, of whom 1543 were internal and 912 external. The total number of successful candidates at all examinations was 9878, and of those who obtained degrees and diplomas 2422, compared respectively with 6343 and 1301 nine years ago and 9481 and 2093 last year. The roll of internal students now comprises 8881 names, as compared with 4888 on the corresponding date in 1914 and 8758 in 1922. Sir Cooper Perry deals with benefactions received during the year under review. The list does not contain any such outstanding items as were recorded in 1920 and 1921; it is pointed out that the University has in the interval been so occupied in assimilating and administering the great gifts of those years that it might even have found itself embarrassed if it had received so soon others of the magnitude associated with the names of Cassel and Rockefeller. It is not implied that the University cannot profitably digest any contributions that either private or public generosity may at any time entrust to it, but that the task of controlling this huge machine has afforded full employment even for the most voracious worker concerned with its administration during the past year. In the section on the organisation of teaching it is stated that hitherto no regular system of visitatorial inspections of the various schools of the University has been in operation. At their last meeting the Senate adopted a scheme by which in the first instance most of the schools in the faculties of theology and medicine shall be formally inspected in the immediate future; and it is intended that those in the other faculties shall receive similar attention as early as may be found practicable. The general question of the suitable housing of undergraduates is a feature of their duties to which the Senate have of late paid an increasing amount of attention, and it is hoped that further developments on a large scale may be found practicable in the near future.

The election to the Senate has resulted in the appointment of the following:—

By His Majesty in Council.—Prof. Sir Arthur Schuster, F.R.S., and Dr. W. C. Unwin, F.R.S.

By Convocation.—Divinity: The Rev. J. A. Douglas. Arts: Miss E. C. Higgins and the Rev. H. B. Workman. Medicine: Dr. R. A. Young, C.B.E. Science: Mr. C. W. Crook, M.P., Dr. C. W. Kimmins, and Sir Sydney Russell-Wells, M.P.

By the Royal College of Physicians of London.—Dr. J. Fawcett.

By the Royal College of Surgeons of England.—Mr. V. Warren Low, C.B., M.D.

University College (co-opted by Senate).—Sir Gregory Foster.

King's College (co-opted by Senate).—Dr. E. Barker.

By the Law Society.—Sir Roger Gregory, J.P.

By the London County Council.—Sir William Collins, K.C.V.O.

By the Faculty of Arts.—Prof. E. A. Gardner and Prof. M. J. M. Hill, F.R.S.

By the Faculty of Medicine.—Lord Dawson and Dr. H. L. Eason, C.B.

By the Faculty of Science.—Prof. L. N. G. Filon, F.R.S., and Mr. J. L. S. Hatton.

A lecture on the Psychology of Epilepsy will be given at the house of the Royal Society of Medicine, 1, Wimpole-street, London, W. 1, by Dr. E. D. Wiersma, Professor of Psychiatry and Neurology in the University of Groningen, on May 24th, at 5.15 P.M. The chair will be taken by Dr. Robert H. Cole. The lecture, which will be delivered in English, is addressed to advanced students of the University and to others interested in the subject. It has been arranged under a scheme for the exchange of lecturers between England and Holland. Admission is free, without ticket.

ROYAL COLLEGES OF PHYSICIANS OF LONDON AND SURGEONS OF ENGLAND.—As the result of the recent Final Examination of the Conjoint Board, held from April 3rd to 26th, the following candidates were approved in the undermentioned subjects, but are not eligible for diplomas:—

Medicine.—F. G. A. Armson and W. A. Atkins, Birmingham; O. D. Ballinger, Oxford and St. Bart.'s; A. A. Battson, St. Thomas's; R. C. Baxter, Charing Cross; Dora M. Berry, Royal Free; D. H. Berry, Guy's; E. J. Blackaby, St. Bart.'s; T. S. Blacklidge and E. R. Boland, Guy's; W. B. Boone and R. T. Brain, London; M. A. B. Brito-Mutunayagam, St. Thomas's; C. O. S. B. Brooke, St. Bart.'s; R. Brooke, Guy's; B. H. Burns, St. George's; Kathleen F. Butterfield, Royal Free; N. E. Chadwick, St. Bart.'s; W. J. B. Chidlow, Liverpool; J. H. K. Clarke and L. T. Clarke, Birmingham; Gladys M. Cox, Royal Free; Cecily D. Crosskey, Birmingham; J. A. Currie, Guy's; D. D. R. Dale, St. Bart.'s; Nancy B. Daniell, King's Coll.; C. K. David, Univ. Coll.; A. B. Davies, Birmingham; Gwladys D. Davies, King's Coll.; A. J. Dodhi, Bombay G. A. Dolman, King's Coll.; A. F. Doyle, St. Thomas's; Helen M. Du Buisson, King's Coll.; G. Dudley, Birmingham; W. H. Dunn, St. Thomas's; P. Ellman, Manchester; H. N. K. Elphick, King's Coll.; J. L. Faull, Guy's; A. E. Fergusson, St. Thomas's; C. W. S. Fernando, Univ. Coll.; H. H. Fisher, St. Bart.'s; K. Fletcher-Barrett, St. George's; Mary E. Fox, Royal Free; M. W. M. Gadrat, Paris; N. G. C. Gane, Middlesex; G. F. Gibberd, Guy's; W. A. Gornall, Bristol; W. Gough, Birmingham; R. J. Gregory, St. George's; Elsie C. Griffin, Charing Cross; Rachel Halperin, Univ. Coll.; Nancy M. Hield and Gladys Hill, Royal Free; B. O. Hillman, Birmingham; Mary D. Horton, Birmingham; Phyllis M. Horton and Kathleen M. Hyslop, Royal Free; C. Ive, Guy's; W. O. C. Jarratt, St. Thomas's; J. Jones, Univ. Coll.; C. E. Keast, Guy's; H. N. C. v. G. Kelaart, Ceylon; K. L. E. Kelligren, Royal Free; M. E. P. Killard-Leavey, Guy's; Charlotte A. Kingdon, St. Mary's; C. d. W. Kitcat, St. Bart.'s; D. Kostitch, King's Coll.; K. H. Lachlan, Westminster; R. E. Lane, Guy's; E. R. Maduram, Royal Free; C. C. Mahoney, St. Mary's; L. P. Marshall and Margaret D. Mason, London; Gertrude M. Mayhall, Leeds; Ethel W. Morris, London; A. C. Mowle, St. Thomas's; L. Mushin and C. A. Nadicarianda, London; M. F. Nicholls, St. George's; H. M. O'Brien, Birmingham; P. H. O'Donovan, London; H. L. Oldershaw, St. Bart.'s; Jean Orr-Ewing, St. Mary's; J. Pearce, Westminster; Florence M. Pearson, St. Mary's; R. P. Perera, Ceylon and London; A. C. T. Perkins, King's Coll.; A. T. W. Powell, Guy's; T. M. Preece, St. Bart.'s; Evelyn R. Pyke, London; K. Rai, Middlesex; A. J. Reed, London; R. D. Reid, St. Bart.'s; Laura M. Rhodes, Royal Free and St. Mary's; W. L. Roberts, Cambridge and Univ. Coll.; M. Rose, Middlesex; Annie E. G. Rowlands, Univ. Coll.; T. E. Ryves, St. Bart.'s; Katharine F. E. Sanders, King's Coll.; J. N. Sankey, Birmingham; P. N. Seth, London; W. P. H. Sheldon, King's Coll.; A. E. Sherwell, Bristol; A. J. Smyth, St. George's; L. V. Snowman, Cambridge and St. Mary's; Betty Stainer and Muriel A. Stephens, King's Coll.; M. H. Steyn, St. Thomas's; Edith C. Summerskill, Charing Cross; H. C. C. Taylor, Guy's; H. A. Thomas, Liverpool; J. H. Thompson, Univ. Coll.; Doris Todd, St. Mary's; B. M. Toop, London; N. C. Tughan, Univ. Coll.; Helen Turover, Charing Cross; Beatrice M. Upshon, Royal Free; Hygeia L. J. Wallace, Charing Cross; E. H. Watkins and R. G. R. West, St. Bart.'s; N. L. White, Univ. Coll.; Doris Williams, Westminster; E. L. Williams, London; Elsie J. Williams, Royal Free; H. C. M. Williams, St. Bart.'s; I. E. Wolf, Lausanne; A. W. Wood, Birmingham; Constance A. P. Wood, King's Coll.; J. T. Wybourn, St. Mary's; Mildred M. E. Yate, Royal Free; and Joyce P. Yeoman and E. Zimmerli, St. Mary's.

Surgery.—N. F. Adency, Cambridge and St. Mary's; G. F. Axon, Charing Cross; S. C. Bakhle, Guy's; W. E. Barnie-Adshead, Birmingham; L. G. Blair, London; Hilda A. Bond, Univ. Coll.; W. A. Caldwell, Guy's; E. H. P. Cave, King's Coll.; H. D. Chalke, St. Bart.'s; B. A. Coles, Westminster; A. B. Cooper, St. Bart.'s; V. Cotton-Cornwall, Liverpool; A. B. Davies, Birmingham; P. O. Davies and J. R. B. Dearden, St. Bart.'s; J. S. Dees, Middlesex; D. Diamond, St. Bart.'s; K. S. Dickinson, Durham; G. P. Driver, R. H. Enoch, and G. S. W. Evans, St. Bart.'s; J. L. Farquharson, St. Thomas's; Emily L. Franklin, King's Coll.; G. F. Gibberd, Guy's; G. v. Gollerkeri, Bombay and Middlesex; N. M. Goodman,

London; F. M. Gore, Birmingham; S. A. Grant, London; L. J. Green, Westminster; S. Halperin, St. Thomas's; G. E. R. Hamilton, King's Coll.; M. Hawke, Guy's; B. D. Hendy, London; M. Honigsberger and L. G. Housden, Guy's; C. Iszatt, London; A. H. Johns, St. Bart.'s; B. H. Jones, St. Thomas's; G. L. S. Kohnstamm, King's Coll.; K. H. Lachlan, Westminster; P. E. M. Lanier, Middlesex; A. L. Lankester, Cambridge and St. Thomas's; T. Latham, Manchester; C. E. M. J. Libert, King's Coll.; B. S. Llewelyn, Westminster; A. R. Macdonald and G. B. McMichael, St. Bart.'s; C. A. Martin, London; J. Maxwell, St. Bart.'s; G. A. Metcalfe, St. Thomas's; S. W. H. Moul, Charing Cross; J. R. Nicholson-Lailey, Bristol; E. Obermer, St. Bart.'s; Carrie H. Osmond, Bristol; J. Parrish, St. Bart.'s; G. W. V. Parry, Guy's; Louisa O. Paterson, Royal Free; J. N. D. Paulson, St. Mary's; R. T. Payne and J. W. Poole, St. Bart.'s; Beatrice M. Powell, Royal Free; C. A. Probert, Guy's; W. A. Rankin, Westminster; R. Riley, Cambridge and St. Mary's; Nora A. Robinson, Charing Cross; T. Robson, St. Thomas's; G. F. Rowbotham, Manchester; J. M. Scott, St. Bart.'s; W. P. H. Sheldon, King's Coll.; J. A. Smorfitt, Leeds; A. C. Sommerville, King's Coll.; W. Stephenson, Durham; E. R. S. Sweeney, St. Mary's; P. Thwaites, St. Bart.'s; H. S. Townsend, King's Coll.; A. Turner, St. Mary's; S. Vatcher, Cambridge and London; Marian E. Williams, Royal Free; R. K. Wilson, Cambridge and London; R. E. Wilson, London; and E. Wornum, Guy's.

Midwifery.—B. Abelman, Liverpool; Iris I. G. Adams, St. Mary's; J. C. Ainsworth-Davis, St. Bart.'s; J. N. Alexander, Guy's; L. V. Angel, Liverpool; E. N. C. Annis, Guy's; F. H. Armanious, St. Thomas's; C. F. Ashby and I. Atkin, St. Bart.'s; W. A. Atkins, Birmingham; P. E. Bardsley, St. Thomas's; St. C. E. J. Barrett, Middlesex; R. C. Baxter, Charing Cross; J. S. Benzecry, Univ. Coll.; D. H. Berry, Guy's; H. M. Bird, Middlesex; T. S. Blackledge, Guy's; A. J. Boyd, St. Thomas's; Gwenddolen J. Brooke, Univ. Coll.; Edna V. Butler, Bristol; W. A. Caldwell, Guy's; Eileen A. Chennell, St. Mary's; W. J. B. Chidlow, Liverpool; J. H. K. Clarke and L. T. Clarke, Birmingham; N. B. Cooke, Liverpool; R. Cove-Smith, King's Coll.; R. S. Creed, St. Thomas's; Cecily D. Crosskey, Birmingham; S. S. Cruden, St. Bart.'s; S. H. Currie, London; C. H. C. Dalton, St. Bart.'s; Agnes S. Daniel, St. Mary's; A. B. Davies, Guy's; G. I. Davies, Univ. Coll.; A. M. Deane, St. Thomas's; F. M. Deighton, Univ. Coll.; T. D. Deighton, St. Bart.'s; J. A. F. Denyssen, Guy's; Miriam Phoebe de Villiers, Royal Free; J. C. G. Dickinson, Guy's; K. S. Dickinson, Durham; A. S. M. Douglas, Guy's; E. F. Duck and Doris L. Durie, Univ. Coll.; H. E. K. Eccles, St. Bart.'s; Barbara J. Edwards, Birmingham; C. L. Elgood and J. Elgood, St. Bart.'s; Josephine O. Ellen, Charing Cross; H. N. K. Elphick, King's Coll.; M. Emery, Basle; W. M. Evans, Univ. Coll.; S. W. Eveson, London; Mary E. Fox, Royal Free and St. Mary's; T. F. Fox, London; Dorothy E. Galbraith, Royal Free; A. Gelberg, Middlesex; W. T. M. Gentle, St. Mary's; W. H. George, London; G. V. Gollerkeri, Bombay; A. W. Gott, Leeds; C. W. Greenway, Guy's; R. J. Gregory, St. George's; W. E. Grice, Middlesex; C. J. P. Grosvenor, St. Bart.'s; J. A. E. M. Hadley and L. W. Hale, Univ. Coll.; C. C. Halliwell, St. Thomas's; G. E. R. Hamilton, King's Coll.; R. C. Hatcher, Bristol; M. Hawke, Guy's; Nancy M. Hield and Gladys Hill, Royal Free; B. O. Hillman, Birmingham; May D. Horton, Birmingham; Katherine E. W. Hulse, Charing Cross; Kathleen M. Hyslop, Royal Free; C. Ive, Guy's; C. M. Jennings, St. Bart.'s; J. W. W. Jepps, St. George's; D. J. Jones, St. Thomas's; I. S. Jones, Liverpool; J. Jones, Univ. Coll.; N. A. Jory, St. Bart.'s; C. E. Keast, Guy's; H. C. N. v. G. Kelaart, Ceylon; R. A. E. Klaber, St. Bart.'s; E. H. Koerner and R. E. Lane, Guy's; O. B. Lean, Univ. Coll.; W. R. A. Line, Birmingham; W. A. Lister, London; D. T. Lloyd, St. Bart.'s; R. J. Lythgoe, Univ. Coll.; J. A. Macfadyen, St. Bart.'s; R. R. Macintosh, Guy's; R. S. MacLatchy, London; W. W. McLean, St. Thomas's; H. 3. Mann, Middlesex; L. P. Marshall, London; Lucy M. T. Masterman, St. Mary's; T. F. Meyrick and H. D. N. Miller, King's Coll.; Elspeth B. Moffat, Royal Free; C. A. Moody, St. Bart.'s; G. O. Morgan, King's Coll.; H. S. Morley, Univ. Coll.; O. G. Morris, Guy's; Una Frances M. Morton, Univ. Coll.; L. N. Moss, St. Mary's; A. C. Mowle, St. Thomas's; Jeannette F. L. Murray, St. Mary's; C. Myers, Sheffield; M. Myers, Durham and Guy's; Josefine W. Nagel, Royal Free; E. E. Neser, Guy's; J. W. Newbold, Univ. Coll.; F. N. Newell-Roberts, Guy's; C. E. Newman, King's Coll.; Frances L. Nichol, Royal Free; J. R. Nicholson-Lailey, Bristol; H. M. O'Brien, Birmingham; T. J. O'Donnell, London; T. B. Pahlajani, Charing Cross; R. T. Payne, St. Bart.'s; Edith G. Peacock, Charing Cross; G. G. Penman, St. Thomas's; Annie Pichaimuthu, Madras; J. W. Poole, St. Bart.'s; Evelyn R. Pyke, London; K. Rai, Middlesex; Violet R. H. Rains, King's Coll.; Laura M. Rhodes, St. Mary's; L. E. Robinson, Univ. Coll; T. Robson, St. Thomas's; M. Rockfelt, Univ. Coll.; E. J. H. Roth and T. E. Ryves, St. Bart.'s; J. N. Sankey, Birmingham; R. W. Savage, St. Bart.'s; Margaret B. Savory, Univ. Coll.; R. W. Scarff, Middlesex; J. M. Scott, St. Bart.'s; H. Seelenfreund and T. A. Shaw, Guy's; N. Smith, St. Bart.'s; N. R. Smith, St. Thomas's; R. W. Smith, St. George's; L. V. Snowman, St. Mary's; K. H. Southall, Univ. Coll.; R. H. Stanbridge, London; E. G. Steeler, St. George's; G. G. Stewart, St. Bart.'s; J. D. M. Stewart, Cambridge and St. Bart.'s; R. V. Storer, Adelaide; F. O. T. Strange, King's Coll.; Viva E. K. Stuart, St. Mary's; Margaret Swete, Royal Free; H. C. C. Taylor, Guy's; H. A. Thomas, Liverpool; G. L. Thompson, Cambridge and London; J. H. G. Thompson, St. Thomas's; G. K. Thornton, St. George's; H. F. Turney, St. Thomas's; G. C. Vaughan, Birmingham; A. L. Walker, Middlesex; S. A. Walker, Liverpool; L. J. Watkins and E. R. Weaver-Adams, St. Thomas's; B. M. R. West, Middlesex; H. A. M. Whitby, St. Bart.'s; R. W. White, London; T. M. Wilks, King's Coll.; Elsie J. Williams, Royal Free; Cicely F. Wilson, Bristol; T. J. Wilson, St. Bart.'s; Esther Wingate, Royal Free; I. E. Wolf, Lausanne; Edith V. Wood, T. E. W. R. Wood, and B. H. H. Wooderson, London; E. Wornum and S. C. H. Worseldine, Guy's; J. T. Wybourn, St. Mary's; H. D. Wyse, Guy's; and Joyce P. Yeoman and E. Zimmerli, St. Mary's.

SOCIETY OF APOTHECARIES OF LONDON.—At examinations held recently the following candidates passed in the subjects indicated:—

Surgery.—R. Caplan, Glasgow; and L. A. Daly, St. Bart.'s Hosp.

Medicine.—W. E. Farnham, Birmingham; B. Hart, Sheffield; L. D. A. Hussey, King's Coll. Hosp.; and W. J. Jameson, Albany Med. Coll., New York.

Forensic Medicine.—B. Hart, Sheffield; L. D. A. Hussey, King's Coll. Hosp.; W. J. Jameson, Albany Med. Coll., New York; I. Lipman, Westminster Hosp.; and S. Thompson, Leeds.

Midwifery.—C. M. John, Madras and Royal Free Hosp.; I. Lipman, Westminster Hosp.; M. McW. Lopez, Univ. Coll. Hosp. and Bristol; H. Maclachlan, Guy's Hosp.; O. Sinanides, Athens; S. Thompson, Leeds; and R. A. Walker, St. Thomas's Hosp.

The Diploma of the Society was granted to the following candidates entitling them to practise medicine, surgery, and midwifery: L. A. Daly, L. D. A. Hussey, M. McW. Lopez, and R. A. Walker.

THE Mackenzie-Davidson Memorial Lecture will be delivered by Prof. A. W. George, of Boston, Mass., on Thursday, May 17th, at 5.30 P.M., in the Barnes Hall of the Royal Society of Medicine. Dr. George will take as his subject the Pathological Gall-Bladder.

MEDICO-LEGAL SOCIETY.—A meeting will be held on May 15th, at 8.30 P.M., at 11, Chandos-street, Cavendish-square, London, W. 1. A paper will be read by Mr. A. H. Trevor on the Mental Treatment Bill, 1923, and will be followed by a discussion.

SOCIETY FOR CONSTRUCTIVE BIRTH CONTROL AND RACIAL PROGRESS.—A meeting will be held on May 16th, at 8 P.M., at Essex Hall, Strand, London, W.C. Earl Russell will give a lecture on Progress and the Law, to be followed by a discussion.

GLASGOW UNIVERSITY CLUB, LONDON.—The summer dinner will be held at the Trocadero Restaurant, London, W., on Friday, June 1st, at 7.30 P.M., when the Lord Rector, Lord Birkenhead, will preside. Any Glasgow University men who, though not members of the club, would like to attend are invited to communicate, as soon as possible, with the hon. secretaries, 1, Harley-place, N.W. 1.

ABERDEEN UNIVERSITY CLUB, LONDON.—The sixty-ninth half-yearly dinner will be held at Gatti's Restaurant, London, W.C., on May 17th at 7.30 P.M., Prof. J. Arthur Thomson in the chair. Past or present graduates of either sex desiring to be present are asked to communicate with the Secretary, Dr. W. A. Milligan, 11, Upper Brook-street, London, W. 1.

MEDICO-PSYCHOLOGICAL ASSOCIATION.—The next quarterly meeting of the Medico-Psychological Association of Great Britain and Ireland will take place on May 24th, at 11, Chandos-street, Cavendish-square, London, W., under the presidency of Prof. G. M. Robertson. Dr. C. K. Clarke, of Toronto, will deliver the Fourth Maudsley Lecture at 3 P.M. at the house of the Royal Society of Medicine, 1, Wimpole-street, London, W. It is proposed to hold a dinner at the Langham Hotel, Portland-place, London, W., on the evening of May 24th, in honour of Dr. Clarke. Members are asked to write to the General Secretary, Dr. R. Worth, Springfield Mental Hospital, London, S.W. 17, stating the number of tickets they require. The annual meeting will take place in London between July 9th and 13th.

The Gaskell Prize and Medal (value £30) was founded in 1887, to honour the memory of the late Mr. Samuel Gaskell, F.R.C.S., at one time medical superintendent of the Lancaster County Lunatic Asylum, Lancaster, and subsequently for 17 years a Commissioner in Lunacy. The prize is given annually to that assistant medical officer who shall most distinguish himself in an examination held in July. Candidates must produce evidence: (*a*) of having attained the age of 23; (*b*) of having been qualified medical officers in one or more asylums for at least two years; (*c*) of possessing the certificate in Psychological Medicine of the Medico-Psychological Association of Great Britain and Ireland. Candidates will be examined in: psychology; healthy and morbid histology of the brain and spinal cord; the diagnosis, prognosis, pathology, treatment, and legal relations of mental disorders; clinical cases with commentaries. Fourteen days' notice to the registrar is required.

MIDDLESEX HOSPITAL MEDICAL SCHOOL.—An Emeritus lecture will be delivered by Sir John Bland-Sutton, F.R.C.S., on June 5th, at 3 P.M., in the Medical School, on the Choroid Plexuses and Ventricles of the Brain as a Secreting Organ.

MANCHESTER DENTAL HOSPITAL.—At the annual meeting it was stated that during the year the attendances of patients increased by 6000, or roughly 20 per cent. The amount contributed by the public in subscriptions was only £220, against an expenditure of £2700. The loss on the year's work amounted to £1000, and the committee are now faced with a deficit on revenue and building fund approaching £6000.

WHOOPING-COUGH IN MANCHESTER.—Whooping-cough and measles appear to be slightly on the increase in Manchester. In the week ending Saturday, April 28th, the new cases of whooping-cough numbered 123 and the deaths 10; new cases of measles, 128, with 3 deaths. Pneumonia also was slightly on the increase—89 new cases and 45 deaths.

FEDERATION OF MEDICAL AND ALLIED SERVICES.—The annual dinner of the Federation has been postponed from May 23rd to Tuesday, May 29th, to suit the convenience of the Rt. Hon. N. Chamberlain, M.P., Minister of Health, who will be the chief guest, and that of several prominent Members who will be away during the Whitsun Parliamentary recess. The dinner will take place at 7.15 P.M. at the Langham Hotel, when it is hoped that members will make every endeavour to support the chairman, Sir Berkeley Moynihan, by their presence and take the opportunity of meeting those actively engaged in the work. The price of tickets is 12*s.* 6*d.*, exclusive of wine, and communications should be made to Lieut.-Colonel N. Howard Mummery, medical director.

BIRMINGHAM AND MIDLAND SKIN AND URINARY HOSPITAL.—The annual report for 1922 contains a statement by the Medical Committee indicating the value of Erlangen deep-therapy for the treatment of cancer and other forms of malignancy. Illustrative cases are given. Among non-malignant conditions which have reacted favourably are fibroid tumour of the uterus, Hodgkin's disease, and keloid, while in lupus the treatment does not seem to have yielded better results than those obtained by ordinary X ray treatment. In the in-patient department 377 patients stayed an average of 19 days each, and one death occurred during the year; in 1921 the number of cases was 212, and the average stay 32 days. 6933 cases were seen in the out-patient department, as compared with 7719 in 1921. The total ordinary income was £7822 and the expenditure £8903.

THE LATE DR. ATLEE HUNT.—The death is announced on May 6th of Dr. Edgar Atlee Hunt. He was in his seventieth year and was living in Colchester where he had been in practice for a great number of years, remaining on his retirement from practice consulting surgeon to the Essex and Colchester Hospital and to the Royal Eastern Counties Asylum, a branch of his work in which he took particular interest. Dr. Hunt, who was educated at Uppingham and St. George's Hospital, was an excellent example of the competent and all-round general practitioner who keeps himself abreast alike of scientific work and social developments. Before starting practice in Colchester he had been resident obstetrician at St. George's Hospital. In his youth he was a prominent football player and could have had his cap for England, but circumstances prevented acceptance of the offer.

LONDON TEMPERANCE HOSPITAL.[1]—The fiftieth annual report of this hospital, which was presented on March 28th, describes the year 1922 as one of unusual difficulty and anxiety. Nevertheless much-needed improvements have been effected in the post-mortem and out-patient departments, more than £2000 having been outlaid thereon, along with the cost of painting and cleaning. A Dean's diascope has been fitted up in the X ray department and new equipment provided in the massage department. Happily the cost of provisions has been falling, while payments from patients have materially increased. The number of in-patients treated during the year amounted to 1059, against 1425 for 1921, the decrease being accounted for by two months' closure of the in-patient department in the summer, which had also the effect of raising the average total cost per in-patient to £14 7*s.* 1*d.* from £11 7*s.* 9*d.* in 1921. The deficit was reduced from nearly £8000 to £728 in the course of the year, chiefly owing to a large legacy. The building of the new nurses' home was put in hand, and an extensive building scheme, to include a new secretary's department, kitchen, and operation department still needs a sum of £20,000 before it can be completed free of debt. The Band of Hope Union is coöperating this year in a novel scheme for collecting money.

[1] We regret that a report which appeared under this heading last week referred to another hospital.

MEDICAL SOCIETY OF LONDON: ANNIVERSARY DINNER.—The 150th anniversary dinner of the Medical Society of London will be held at the Hyde Park Hotel (entrance through the Grill Room) on Tuesday, May 15th, when H.R.H. the Prince of Wales will be the principal guest. The toast of "Medicine and the Medical Society of London" will be proposed by the Right Hon. David Lloyd George and responded to by Lord Dawson, the President. The toast of the "Sister Professions and the Guests" will be proposed by Sir John Bland-Sutton, and responded to by the Lord Chief Justice, Lord Hewart, and by the Right Hon. Neville Chamberlain, Minister of Health. The President will receive the Fellows and their guests at 7.30 P.M. They are requested to take their places at the dinner tables at 7.45 P.M. in order that the audience may be seated before the arrival of the Prince. It is suggested that the interval might be utilised in ordering such wines as are wished for. Amongst the guests will be: Lord Justice Atkin, Viscount Astor, Sir Clifford Allbutt, Prof. Angus, Sir Anthony Bowlby, Dr. Hubert Bond, Lord Burnham, the Bishop of Birmingham, Prof. Blair Bell, Mr. A. H. Burgess, Dr. Arnold Chaplin, Sir E. Cooper Perry, the Earl of Donoughmore, Sir Crisp English, Mr. Elliott (Lettsom family), Sir Walter Fletcher, Dr. Fothergill (Fothergill family), Sir John Goodwin, Prof. E. W. Hey Groves, Prof. A. W. George (Boston), Sir Archibald Garrod, Sir William Hamer, Sir William Hale-White, Mr. Patrick Hastings, K.C., Sir Edward Marshall Hall, K.C., Sir Robert Hadfield, Prof. F. Gowland Hopkins, Sir Robert Jones, Dr. Robert Knox, Lord Kenyon, Sir William Lister, Sir William Leishman, Sir John Lynn-Thomas, Dr. F. N. Kay Menzies, Sir William Macewen, Prof. R. Muir, Prof. J. Marnock, Sir George Newman, Sir William Orpen, Sir Arthur Pinero, Hon. Sir Charles Parsons, Sir Milsom Rees, Prof. G. M. Robertson, Sir Arthur Robinson, Lord Riddell, Sir Squire Sprigge, Sir Arthur Stanley, Sir Harold Stiles, Prof. W. S. Thayer (Johns Hopkins), Mr. H. J. Waring, Sir Aston Webb, Sir W. de C. Wheeler, and Sir Alfred Yarrow.

ROYAL COLLEGE OF SURGEONS IN IRELAND.—A deputation from the College, consisting of Sir William I. de C. Wheeler, president; Mr. R. C. B. Maunsell, vice-president; Sir Lambert Ormsby, secretary; Sir Thomas Myles, Sir Arthur Chance, Sir Conway Dwyer, and Mr. Alfred Miller, registrar, waited on the Governor-General of the Free State last week for the purpose of presenting an address of welcome. The address included an assurance that the services of the College would on all occasions be placed loyally and wholeheartedly at the disposal of the Government of the Irish Free State wherever questions arose affecting the public health or the welfare of the people. The Governor-General, in his reply, dwelt on the esteem in which Irish surgeons were held for skill, originality, and courage. The members of the deputation afterwards had luncheon with the Governor-General.

PARIS POST-GRADUATE LECTURES.—*Hôpital Trousseau.*—Ten lectures on Clinical Treatment of Non-Tuberculous Affections of the Bones in Children will be given by Dr. Hallopeau, surgeon to the hospital, from July 2nd to 13th. The treatments discussed will be those of fractures of arm, fractures of leg, acute osteomyelitis, congenital club-foot, scoliosis, acquired deformities (flat-foot, hallux valgus, torticollis, &c.), sequelæ of infantile paralysis, flail joints and pseudoarthrosis, ankylosis, and congenital luxation. Full particulars on application to the hospital, Rue Michel Bizot, Paris.—*Hôpital Maritime de Berck:* The above course will be followed by a course of 12 lectures on Tuberculosis of the Bones, Joints, and Glands, and the Elements of Practical Orthopædics, by Drs. Sorrel, Andrieu, Tridon, Mozer, and Parin, from July 16th to 29th. The mornings will be devoted to practical demonstrations, and lectures will be held in the afternoons. The subjects will be Pott's disease; coxalgia; tuberculosis of the knee-joint; tuberculous osteitis and osteo-arthritis of the foot; tuberculosis of the shoulder, elbow, and wrist; spina ventosa and cold abscess of soft parts; laboratory and radiographic diagnosis; non-tuberculous osteitis and osteo-arthritis; chronic adenitis; rachitism and scoliosis; congenital luxation of the hip. Full particulars on application to Dr. Parin, at the hospital, Berck-Plage.

NORTH WALSHAM MEMORIAL HOSPITAL.—In January, 1919, it was decided that the war memorial of the town should take the form of a cottage hospital, and the foundation-stone was actually laid in the latter part of that year. On April 23rd last a public meeting was held to receive the report of the committee which was presented by Dr C. H. W. Page, who stated that the plans and architect for the proposed hospital had been approved, and the committee were of opinion that they were now financially justified in building. The total available resources were £7108, £380 of which represented the value of land, apparatus, and

furniture, leaving a balance of £6728. Approximately £100 per annum in annual subscriptions had been promised. The architect had stated that the estimated cost of erecting the building, including everything except actual furniture and architect's fees, was £3500. The hospital was planned to contain three male and three female beds, two private rooms containing one bed each, an operating room, and the necessary administrative offices. Dr. Page stated that a bed in the Norfolk and Norwich Hospital cost £160 per annum, whereas it was estimated that a bed in the proposed cottage hospital would only cost about £79. Last year there were 60 cases sent from North Walsham to the Norfolk and Norwich Hospital. Most of them could have been dealt with in a cottage hospital, and it was well known that there was a great shortage of beds in the Norfolk and Norwich Hospital. Sir Hamilton Ballance, one of the surgeons to that institution, had expressed himself as favourable to the scheme. The Secretary of the North Walsham Branch Saturday and Sunday Fund said that they now had 700 members and that the proposed local hospital would receive considerable help from the fund. All local workmen were in favour of the proposed hospital. It was decided that the work should be proceeded with.

ROYAL INSTITUTION.—At a general monthly meeting held on May 7th Sir J. J. Thomson was elected honorary professor of natural philosophy and Sir Ernest Rutherford professor of natural philosophy. It was announced that the following, among others, had been nominated as Vice-Presidents for the ensuing year: Dr. Mitchell Bruce, Sir James Crichton-Browne (treasurer), and Sir Arthur Keith (secretary).

IN connexion with the first annual joint meeting of the Rontgen Society and the Electro-Therapeutic Section of the Royal Society of Medicine, a dinner will be held at the Langham Hotel on Thursday, May 17th, at 8 P.M. (price 10*s.* 6*d.*, exclusive of wine, payable at the table). Members who wish to be present are asked to notify the secretary of the Electro-Therapeutic Section of the R.S.M., 1, Wimpole-street, London, W. 1.

THE LATE MR. CHARLES KILLICK.—The medical profession, not only of Bradford but also of a much wider area, has to deplore the sudden and tragic death on April 27th, at the age of 48, of Mr. Charles Killick, M.D. Camb., F.R.C.S. Eng., hon. ophthalmic surgeon to Bradford Royal Infirmary. Apparently in normal health, he infected his finger while examining an ophthalmic patient, and died of septicæmia within nine days. Born near Bradford, a member of a well-known professional family, he received his medical education at Cambridge University, and after graduating with honours in the Natural Science Tripos, he gained a University Scholarship at St. Mary's Hospital, Paddington. His bent, ophthalmological almost from the first, soon led him to take up that branch of surgery, and he spent many years in Maidstone in ophthalmic practice and as hon. surgeon to the Kent County Ophthalmic Hospital. In spite of his success there, he felt that Kent was not sufficiently bracing for his children and he returned to Bradford, becoming hon. ophthalmic surgeon to the Royal Eye and Ear Hospital. He was a life member of the Soc. Opht. de France, a member of the Council of the Ophthalmic Section of the Royal Society of Medicine, and a frequent contributor to the literature of his subject. His chief hobby was the translation of French and other foreign ophthalmic works, and he greatly preferred literary and scientific studies to outdoor recreation. Of recent years he became interested in Freemasonry, and obtained in a very short time an astonishing mastery of its ritual. His geniality and mental alertness as well as his great medical abilities made him universally popular in Bradford, where his early death is felt as a severe loss to the profession. Sympathy is extended to his widow and young children.

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HOUSE OF LORDS.

THURSDAY, MAY 3RD.

MENTAL TREATMENT BILL.

The EARL OF ONSLOW, in moving the second reading of the Mental Treatment Bill, said that public attention had recently been drawn to the question of the lunacy law and administration, and early last year a conference, consisting of the chairmen of the visiting committees, medical superintendents of mental hospitals, and a number of specialists, was arranged by the Board of Control. The conference decided to ask the Government to obtain legislation permitting treatment without certification in institutions approved by the Board of Control. At present the lunacy laws dealt, firstly, with the detention of lunatics, so as to prevent them from injuring themselves or other people; secondly, they were devised to secure humane and proper treatment of lunatics in mental hospitals; and thirdly, to secure their property against fraud or misappropriation. They did not deal exhaustively with cure, the importance of which was realised when it was known that they had now some 120,000 certified lunatics in 172 institutions costing £6,000,000 a year. To these were added 22,000 fresh cases every year, of whom about 32 per cent. were discharged as recovered. In addition, there were 150,000 persons who were feeble-minded and also a percentage of the population (some people said as high as 10 per cent.) who were dull and backward mentally. Lastly, they had the cases of neurasthenia and psycho-neurosis. All this was a serious drain upon the capacity of the nation, and modern science told them that much of it was preventable by careful watching and early treatment. A distinguished alienist told him the other day that his practice was scarcely at all with certified patients: it was mainly with young people in whom signs or suspected signs of mental disorder were detected. As the law stood at present it was not possible or, at least, very difficult to provide for the treatment of incipient mental disease without certification, against which there was very naturally and very properly a strong feeling. The chief purpose of the Bill was to provide that a patient suffering from incipient mental disorder might be received for treatment without certification. This system had been adopted for many years in Scotland, while in this country, under the Act of 1890, voluntary boarders had been allowed in private licensed houses. Everyone recognised how enormously important it was that no power should be given and no loophole opened for the improper use of provisions such as those contained in the Bill. Among the safeguards which they had introduced, first of all the institution must be one which was approved by the Board of Control and under frequent inspection by them. Secondly, there must be a recommendation from two doctors. And thirdly, no patient could be admitted unless it was at his own voluntary request.

Persons Incapable of Volition.

But many cases of incipient mental disease were incapable of volition, and such cases very often, if treated properly, were capable of complete cure. In such cases as these, before they could be admitted the recommendation of the two doctors had to be countersigned by a justice of the peace or a minister of religion personally acquainted with the patient, but not related to him, and the person signing the document must have seen the patient and satisfied himself that he was incapable of volition or voluntary action at the time. A similar procedure was required in the case of minors and, of course, in addition the consent of the parent or guardian must be obtained for the admission of a minor into one of these institutions. One of the doctors, at least, must be a medical man approved by the Board of Control.

The patient could come into the institution at first for a maximum period of six months, which might be extended for another maximum period of six months, being one year in all. He could not undergo this treatment for more than a year. If he was not cured after the year was over, the ordinary provisions of the existing Acts would apply, but at any time during the year he might leave the institution by giving 48 hours' notice, or he might be discharged by the superintendent, or by order of the Board of Control. It was provided in Clause 1 (3) for county and borough councils, acting through their visiting committees, to receive patients into their own institutions. In Clause 4 it was also provided that visiting committees should be able to arrange for general hospitals to receive patients of this kind and to work in conjunction with visiting committees. If this could be done, great advantage to patients might ensue by getting them away from contact with certified cases, and it would enable all the resources of medicine, other than those provided especially for mental disease, to be at the disposal of the patient. The patient, of course, could also be received in registered hospitals, which were mostly charitable foundations

or licensed houses which were otherwise known as private asylums.

Out-patient Treatment and After-care.

Another provision of the Bill enabled visiting committees to provide out-patient treatment for persons suffering from mental disorder. They would be at liberty to do this either in institutions under their own control or by arranging for it to be done in general hospitals in the same way as they would be empowered to arrange for in-patients. An outdoor clinic for nervous and mental cases had been established at the Radcliffe Hospital, Oxford, with the greatest possible success. No difference was made between nervous and mental patients. It had been found that patients and their friends were much more ready to come to a clinic of this kind than to a separate mental hospital, and altogether the results had been justified.

The Bill also provided that visiting committees might make provision for the after-care of patients. It had been found that many patients who were discharged as cured were apt to break down again unless they were carefully and kindly looked after during the months following their discharge. This question of after-care, therefore, was of the utmost importance if they wished to make permanent the cures effected in mental hospitals: and it was to be hoped that the visiting committee would give their most careful attention to the provision of this service.

Unknown Causes of Mental Disease.

In spite of the progress in knowledge of mental disease during the last quarter of a century, it was still an unfortunate fact that many of the causes of mental illness were largely unknown at present. If mental disease could be systematically explored they might assume that much progress might be made in the prevention and cure of this disease. In Clause 2, Subsection (5), provision was made for more systematic research and more opportunity was given for the expenditure of public money upon that research. Coördination—a most important point—was provided for by requiring that the researches should be undertaken with the approval of the Board of Control. In this measure they endeavoured to extend the functions of the visiting committees to enable them to carry out their present duty more efficiently and also to cope with the new duties which would be placed upon them by this Bill. Firstly, they provided that a proportion, not exceeding one-third, might be persons who were not members of the Council. This was a principle which had been adopted in regard to education committees, maternity and child welfare committees, and so forth, and it was designed to enable the Committee to co-opt expert opinion among their members, and also to get the services of people who might not be members of the Council, but who were willing to give their whole time or a large part of their time to the work of the Committee. Two at least of each visiting committee would be women, and the committees were given power to carry out their duties jointly with other authorities. The expenses of visiting committees were to be defrayed by the local authorities within the county or borough within whose area they operated. The maintenance of cases which came in for treatment for incipient disease had no connexion with the Poor-law. There was no pauper taint. The local authority could either treat them or might make arrangements for their maintenance, the cost falling upon the general fund and not on the guardians of the union in which the patient happened to reside.

The Question of Inspection.

The Mental Deficiency Act of 1913 greatly increased the amount of visiting and raised the number of Commissioners to 11. At present there were seven Commissioners, one a woman who, being neither a lawyer nor a doctor, could not pay statutory visits. The existing staff could not cope with the growing work and, of course, this Bill would probably throw extra inspection upon the Board. It was quite out of the question to reduce the number of statutory visits, but a great many of these statutory visits and local work which now had to be done by Commissioners could, in the view of the Ministry of Health, be efficiently done by inspectors if the law allowed, and the most economical and practical method would seem to be to limit the number of Commissioners to eight and allow the visits and local work to be carried out by inspectors instead of Commissioners, where this can properly be done. This was provided for in Clause 3, Subsection (2). That, in the view of the Ministry of Health, was the best method for providing for the proper inspection which would be required under this Act.

The Bill Discussed.

Lord BUCKMASTER welcomed the Bill, but said he thought that under proper safeguards greater power should be given by the measure for the treatment of these patients. To his mind it was an appalling fact that the reproduction of our population was taking place in inverse ratio to the value of the people who were being produced. He thought the time had come when the whole question of the perpetuation of the utterly unfit, weak-minded, and insane should be the subject of full investigation, and he wished the Government had had the courage before they introduced the Bill to appoint a Commission to consider the whole question.

The BISHOP OF WORCESTER said that the present fear of being sent to an asylum would disappear when people realised that these hospitals were places of cure. The medical staff of these institutions were doing a great work, and they had done nothing like what they ought to do to protect those who were giving their lives to the State in this work. Whatever the defects of detail of the measure, their lordships would thankfully accept it as a rather wonderful instalment of fresh hope for those who had been suffering in these sad ways.

Earl RUSSELL congratulated the Government on the introduction of the measure. Practically everyone, he said, who had studied the question would favour the sterilisation of the insane in view of the hereditary and fairly prolific character of these cases. He urged that the 48 hours' provision in Clause 5 should be extended by making a patient's discharge subject to an order of the Board of Control.

The EARL OF ONSLOW said that the introduction of compulsion in retaining a patient in an institution longer than 48 hours would be a considerable step beyond what was proposed in the Bill, and he could not give any indication that the Government would adopt it if it came up for consideration in Committee.

The Bill was read a second time.

HOUSE OF COMMONS.

WEDNESDAY, MAY 2ND.

Naval and Military Hospitals at Hong-Kong.

Mr. GERSHOM STEWART asked the First Lord of the Admiralty whether it would be possible to effect an economy in naval expenditure at Hong-Kong by amalgamating the naval and military hospitals, and, in view of the fact that the naval hospital was very near to the reclamation being carried out in the harbour and of the very high price of land ruling in the colony, if he would consider the advisability of disposing of the site of the present naval hospital, for which a large sum of money could be obtained.—Mr. AMERY replied: This question was carefully considered by the Board of Admiralty 12 months ago, and later came under the review of the committee appointed by the late Government to consider the amalgamation of services common to the Navy, Army, and Air Force. The conclusion arrived at was that there would not be a sufficient margin of accommodation if amalgamation were to take place. This would especially be the case as regards officers, the military hospital at Hong-Kong having only six equipped beds for officers.

Village Settlements for Tuberculous ex-Service Men.

Colonel Sir ARTHUR HOLBROOK asked the Minister of Health whether he would take some action in furtherance of village settlement schemes for tuberculous ex-Service men, as recommended by the Barlow Report of 1918, by the establishment of additional settlements; and whether it was now contemplated to complete the village settlements at Papworth Hall, Cambridgeshire, and Barrowmore, in Cheshire.—Mr. NEVILLE CHAMBERLAIN replied: I have recently discussed this question with representatives of the British Legion at a meeting at which my right hon. friend the Minister of Pensions was also present. I am endeavouring to arrange for a personal visit to the settlement at Papworth and also to that at Preston Hall, Kent, during the Whitsun recess, and I hope to be able to arrive at a final decision on the whole question very soon afterwards.

Overcrowding in Poplar.

Mr. LANSBURY asked the Minister of Health whether he had received a communication from the medical officer of health for the Borough of Poplar enclosing a statement of 10 typical cases of serious overcrowding in the borough and specially drawing attention to the fact that in every case a person suffering from tuberculosis was living and sleeping with the men, women, and children existing under these conditions; whether he was aware that the medical officer of health for Poplar, on the instructions of the health committee, had on many occasions made representations to Ministers of Health urging that the law should be put into operation for clearing the slum areas in the borough, and that the official reply of the Ministry had always been that the local and national finances did not permit of these unhealthy areas being dealt with; and would he give instructions to one of the officers of his department to proceed to Poplar and advise the medical officer of health and the borough council what steps they should take in order to efficiently deal with the prevailing conditions, which daily became more deplorable.—Mr. NEVILLE CHAMBERLAIN replied: The answer to the first question is in the affirmative. The answer to the second question is that I am not, as at present advised, aware of official correspondence between the Ministry of Health and the medical officer of health of the character

mentioned or of such official statements as are mentioned. The answer to the third is that the nature of the action which can be taken in such regrettable conditions, short of rehousing the people, should be within the knowledge of the medical officer of health. As regards rehousing, I may add that it is for the Borough Council of Poplar to approach the L.C.C. with a view to proper consideration of the claim of the borough for inclusion in the general scheme of slum improvement in London which is under consideration and for which State assistance would be forthcoming under the Housing Bill.

Milk and Dairies (Amendment) Act.

Mr. HANNON asked the Minister of Health whether he was aware that the uncertainty as to the date on which the regulations under the Milk and Dairies (Amendment) Act will come into operation was causing perturbation amongst those interested in the improvement of the conditions of the national milk-supply, and that the majority of dairymen were postponing action until such time as the intentions of the Ministry of Health were known; and whether he intended to fix July 1st, 1923, as the date on which the regulations would come into force.—Mr. NEVILLE CHAMBERLAIN replied: I assume that my hon. friend is referring to the Milk (Special Designations) Order, 1922, which came into operation on Jan. 1st last. In accordance with the promise which I gave on March 13th to my hon. friend the Member for the Stone Division, the Order has been revised in certain matters of detail and I hope to be in a position to issue the revised Order at an early date. It is proposed that the new Order shall come into operation on July 1st next.

Approved Societies' Funds and Medical Benefit.

Sir KINGSLEY WOOD asked the Minister of Health whether the Government actuary notified Sir Eric Geddes's Committee that he could not safely advise that the funds of approved societies could bear any further burden in respect of increased payments on account of medical benefit without an increase of contributions; and whether he had given any further advice on this subject.—Mr. NEVILLE CHAMBERLAIN replied: The advice given by the Government actuary to the Committee on National Expenditure in regard to the matter referred to by the hon. Member is contained in Appendix B. to the first report of that committee (Cmd. 1581), page 139. The Government actuary gave further advice on the subject in his report on the Financial Provisions of the National Health Insurance Act, 1922.

A Case of Dementia Præcox.

Captain ERSKINE-BOLST asked the Minister of Pensions whether he was aware that John Ernest Taylor, M.M., late 8th City of London Post Office Rifles, was at present in the mental hospital, Claybury, suffering from shell-shock; that when he, in a fit of depression, tore a bed sheet, he was placed in a small shuttered and darkened room with several lunatics, without sufficient clothing; that, when visited by his parents on April 8th and 9th, he was shivering and had developed a chill; and that the mother was informed on April 22nd by the doctor that her son had been vomiting and was not expected to recover; and whether he would take steps to have this patient removed to a shell-shock or convalescent home and institute inquiries into the conduct of the officials concerned at Claybury.—Lord EUSTACE PERCY replied: The Board of Control have seen the medical superintendent of Claybury and inquired fully into the circumstances of this case. The patient, James (not John) Ernest Taylor, is suffering from dementia præcox. He is at times violently impulsive and destructive. On April 5th he destroyed a sheet and pillow cases and was placed in a side room which, for his own protection, had the shutters of the window closed. It is not a fact that other patients were in this side room with him, or that he was without sufficient clothing. The medical officer who has had charge of the case since December states that the patient has never suffered from a chill while under his care. The patient vomited on April 23rd and was seen by the medical officer, who prescribed for him, and on the following day he had recovered from this attack. Mrs. Taylor, who visited her son on April 23rd, was informed that his mental prospects were poor, not that his general health was critical; he is, in fact, physically a strong and healthy man. My right hon. friend is advised that the patient is not at present a suitable case to be treated outside a mental hospital. During his residence at Claybury he has attacked and seriously injured three attendants, one of whom was off duty for six weeks.

THURSDAY, MAY 3RD.

Reconsideration of Conditional Assessments.

Mr. BROTHERTON asked the Minister of Pensions what provision was made in the case of men suffering from bronchitis and/or asthma who appealed on the grounds that they were under-assessed; and whether men suffering from these disabilities, on home treatment without allowances, could have the same privilege extended to them as was given to the men on in-patient treatment with allowances—i.e., that they might be reboarded when ill and not, as at present, have to wait until they had recovered from the attack of sickness that incapacitated them from work before the appeal to the medical appeal board was considered.—Major TRYON replied: The right of application for reconsideration of a conditional assessment applies equally to all disabilities, and the instructions do not, as the hon. Member appears to think, preclude applications of this nature being dealt with when the man is undergoing home treatment without allowances.

MONDAY, MAY 7TH.

Medical Appointments in Cumberland.

Mr. GAVAN-DUFFY asked the Minister of Health if, before giving his sanction to the appointment of a medical officer of health for the urban district area of Frizington, Cumberland, take into serious consideration the recommendation of the county of Cumberland medical officer of health that several of the small urban areas should, in the interest of efficiency and the proper administration of the laws of public health, be amalgamated under one full-time medical officer instead of the present system of appointing officers who could do no effective work as medical officers of health without sacrificing the interests of their panel patients.—Lord EUSTACE PERCY replied: My right hon. friend has received no formal representation for the issue of an Order to combine this with other districts for the purpose of appointing a whole-time officer. He has, however, tried to arrange for such an appointment to be made by agreement. As these efforts have not been successful, he has not thought it practicable to object to the district council's proposals to appoint a part-time officer, who has, however, been required to give a written undertaking to resign the appointment in the event of a whole-time officer being appointed. My right hon. friend cannot accept the suggestion that no effective work can be done by part-time medical officers of health without prejudicing the interests of their panel (or other) patients.

Education of Mentally and Physically Defective Children.

Mr. ROBERT MORRISON asked the President of the Board of Education how many local educational authorities made special school accommodation for mentally and physically defective children during 1922; how many authorities were permitted to open new special schools; how many were refused; and, of those refused, on what grounds.—Lord EUSTACE PERCY replied: During the year ending Dec. 31st, 1922, 90 local education authorities in England and Wales were providing special school accommodation for mentally or physically defective children. Five authorities were allowed, and seven were, on financial grounds, refused permission to open new schools.

Water Supplies in Rural Districts.

Colonel Sir ARTHUR HOLBROOK asked the Minister of Health whether he would consider, as one method of relief works for the unemployed, the supply of water to rural districts in which at present water had to be brought from a distance, thus ensuring an ample supply of pure water, which was necessary for the preservation of health.—Lord EUSTACE PERCY replied: Schemes of this kind submitted by local authorities will be considered if the degree of local unemployment is sufficient to warrant this course, and if the proposals are practicable from an engineering and financial point of view.

TUESDAY, MAY 8TH.

Preservatives in Food.

Mr. ALBERT BENNETT asked the Minister of Health if his attention had been called to the representations of county and borough councils, based on the advice of their respective medical officers, that a limit should be placed on the use of preservatives in food; and whether he would appoint a committee of investigation into the question, seeing that for many years the local authorities had been urging that action should be taken.—Mr. NEVILLE CHAMBERLAIN replied: The answer to the first part of the question is in the affirmative. I have already taken preliminary steps to appoint a small committee to inquire into the general question of the use of preservatives and colouring matters in food.

Appointments.

FYFE, G. M., M.B., Ch.B. Aberd., has been appointed Junior V.D. Officer at the Aberdeen Royal Infirmary.

PIATROWSKI, J. GEORGES, L.R.C.P., M.R.C.S., Second Resident Medical Officer at the French Hospital.

REYNOLDS, RUSSELL J., M.B., B.S. Lond., Honorary Adviser in Radiology to the Ministry of Pensions.

TATE, J., M.R.C.S., L.R.C.P. Lond., D.P.H., Medical Officer of Health for the Administrative County of Middlesex.

TUXFORD, R., M.R.C.S., L.R.C.P. Lond., to be one of the Medical Referees under the Workmen's Compensation Act, 1906, for County Court Circuit No. 17, Boston, Holbeach, Sleaford, &c.

Vacancies.

For further information refer to the advertisement columns.

Aberdeen Royal Mental Hospital.—Senior Asst. P. £400 to £500.
Barking Town Urban District Council.—Female Asst. M.O.H. and Asst. School M.O. £500.
Birkenhead and Wirral Children's Hospital.—H.S. £100.
Birmingham and Midland Ear and Throat Hospital.—Jun. H.S. £200.
Boodle Borough Hospital.—Jun. H.S. £150.
Bradford Royal Eye and Ear Hospital.—Hon. Ophth. S.
Calcutta, School of Tropical Medicine and Hygiene.—Research Worker. Rs.1750.
Cambridge, Addenbrooke's Hospital.—H.P. £130.
Cardiff, King Edward VII. Hospital.—Ophth. H.S. and Cas. O. Each £100.
Central London Ophthalmic Hospital, Judd-street, St. Pancras, W.C.—X Ray Officer.
Chester, Burntwood Sanatorium.—Res. Med. Supt. £900.
Dreadnought Hospital, Greenwich, S.E.—H.S. £150.
Elizabeth Garrett Anderson Hospital, Euston-road.—H.P., Two H.S.'s., and Obstet. Asst. Each £50.
Farcham, Hants, Knowle Mental Hospital.—Fourth Asst. M.O. £350.
General Lying-in Hospital, York-road, Lambeth, S.E.—Res. M.O. £100.
Gloucestershire Royal Infirmary.—Asst. S.
Great Yarmouth Hospital.—H.S. £150.
Hospital for Sick Children, Great Ormond-street, W.C.—H.S. £50.
King Edward VII. Sanatorium, Midhurst, Sussex.—Second Asst. M.O. £250.
Leeds, West Riding Asylum, Menston.—Fourth Asst. M.O. £400.
London County Mental Hospital Service.—Seventh Asst. M.O. £440.
London Jewish Hospital, Stepney Green, E.—Second Hon. Anæsthetist.
London Lock Hospital, 283, Harrow-road, W.—H.S. £200.
Macclesfield, Cheshire County Mental Hospital, Parkside.—Locum Tenens A.M.O. £10 10s. weekly.
Middlesex County Council.—Deputy County M.O.H. £840. Asst. M.O. £550.
National Hospital for the Paralysed and Epileptic, Queen-square, W.C.—Senior H.P. £150.
Newcastle-upon-Tyne Corporation.—Asst. M.O.H. £750.
Newcastle-upon-Tyne, Royal Victoria Infirmary.—Asst. Radiologist. £400.
Northamptonshire County Council Education Committee.—Asst. Sch. M.O. £500.
North Ronaldshay, Orkney.—Med. Pract. £400.
Portsmouth Workhouse Infirmary and Children's Home.—Second Asst. R.M.O. £300.
Royal College of Surgeons of England.—Professors and Lecturers.
Royal London Ophthalmic Hospital, City-road, E.C.—Ear, Nose, and Throat S.
Royal Northern Hospital, Holloway, N.—Cas. O. £150.
Royal Waterloo Hospital for Children and Women, Waterloo-road, S.E.—H.S. and H.P. Each £100.
St. Bartholomew's Hospital Medical College.—Lecturer on Biology. £500.
Saint Pancras Dispensary, 39, Oakley-square, N.W.—Res. M.O. £225.
Sheffield Royal Infirmary.—H.S. for Ear, Nose, and Throat. £150.
South Shields County Borough Sanatorium.—Asst. Tub. O. £500.
Victoria Hospital for Children, Tite-street, Chelsea, S.W.—H.S. £100.
Wakefield City.—Asst. M.O.H. £550.
Wolverhampton and Staffordshire General Hospital.—Res. Cas. S. £250.

The Chief Inspector of Factories, Home Office, London, S.W., announces a vacant appointment at Bangor (Carnarvon).

Births, Marriages, and Deaths.

BIRTHS.

COFFIN.—On May 3rd, at 2, Meadway Close, Golders Green, N.W. 11, to Mr. and Mrs. Stephen Coffin—a son.
COVENTON.—On May 3rd, the wife of Dr. A. W. Duncan Coventon, The Chantry, Aylesbury, Bucks, of a son.
COX.—On May 5th, at Avenue-road, Highgate, the wife of Dr. Hedley Chave Cox, of a son.
GIRI.—On April 28th, at 192A, West End Lane, London, N.W. 6, the wife of D. V. Giri, L.R.C.P. & S. Edin., L.F.P.S. Glasg., D.P.H. Lond., D.O. Oxon., of a son.
MCCRAE AITKEN.—On May 2nd, at Park-street, W., the wife of D. McCrae Aitken, F.R.C.S., of a son.

MARRIAGES.

HOLMES—ROBINS.—On May 1st, at St. Andrew's, Hove, E. Arthur Holmes, M.R.C.S., to Betty May, elder daughter of Mr. and Mrs. Frank Robins, of Brunswick-place, Hove.

DEATHS.

DAVIES.—On May 2nd, at Blackheath, Langford George Davies, M.A., M.B., B.C. Camb., M.R.C.S., L.R.C.P. Lond., late R.A.M.C. and R.A.F., aged 42 years.
HUNT.—On May 6th, at Crouched Friars, Colchester, Edgar Atlee Hunt, F.R.C.S., J.P., aged 69 years.

N.B.—A fee of 7s. 6d. is charged for the insertion of Notices of Births, Marriages, and Deaths.

Medical Diary.

Information to be included in this column should reach us in proper form on Tuesday, and cannot appear if it reaches us later than the first post on Wednesday morning.

SOCIETIES.

ROYAL SOCIETY OF MEDICINE, 1, Wimpole-street, W.

MEETINGS OF SECTIONS.

Tuesday, May 15th.

GENERAL MEETING OF FELLOWS: at 5 P.M.
Ballot for election to the Fellowship. (Names already circulated.)

Wednesday, May 16th.

HISTORY OF MEDICINE: at 5 P.M.
Annual General Meeting:
Election of Officers and Council for 1923–24.
Papers:
Sir Frederick Smith: The Influence of the Medical Profession on the Development of Veterinary Knowledge in the Eighteenth Century.
Mr. E. J. Holmyard: Arabic Alchemy.

Thursday, May 17th.

DERMATOLOGY: at 5 P.M. (Cases at 4.30 P.M.)
Annual General Meeting:
Election of Officers and Council for 1923–24.
Cases will be shown.

ELECTRO-THERAPEUTICS: at 5.30 P.M.
First Annual Joint Meeting of the Section with the Rontgen Society:—
The Mackenzie-Davidson Memorial Lecture will be given by Prof. A. W. George (Massachusetts General Hospital, Boston, U.S.A.) on the Pathological Gall-bladder.
There will be an exhibition of radiograms bearing on the subject of the lecture.

MEDICINE; SURGERY.
Members of these Sections are cordially invited to attend this Meeting.
The Meeting will be followed by a Dinner at the Langham Hotel at 8 P.M. The price of the Dinner (exclusive of wine) is 10s. 6d., payable at the table.

Friday, May 18th.

OTOLOGY: at 5 P.M. (Cases at 4.30 P.M.)
Annual General Meeting:
Election of Officers and Council for 1923–24.
4 P.M.
Demonstration by Mr. Richard Lake of an instrument for the deaf.
4.30 P.M.
Cases and Specimens will be shown by Dr. Dan McKenzie and others.

MEDICAL SOCIETY OF LONDON, 11, Chandos-street, Cavendish-square, W.
MONDAY, May 14th.—8 P.M., Annual General Meeting. 8.30 P.M., Reception by the President. 9 P.M., Dr. J. Walter Carr: Annual Oration on Life and Problems in a Medical Utopia. To be followed by a Conversazione.

MEDICO-LEGAL SOCIETY, 11, Chandos-street, Cavendish-square, W.
TUESDAY, May 15th.—8.30 P.M., Paper by Mr. A. H. Trevor on the Mental Treatment Bill, 1923, to be followed by a Discussion.

ROYAL SOCIETY OF TROPICAL MEDICINE AND HYGIENE, 11, Chandos-street, W.
THURSDAY, May 17th.—8.15 P.M., A Paper will be read on the Treatment of Refractory Cases of Amœbic Dysentery, by Dr. J. Graham Willmore, S.M.O., Tropical Section, Ministry of Pensions Hospital, Orpington, with a Note on Emetine Preparations for Rectal and Oral Use, by W. H. Martindale, Ph.D.
The Meeting will be preceded by a Demonstration from 7.45 P.M.–8.15 P.M., of certain drugs referred to in the Paper.

LONDON DERMATOLOGICAL SOCIETY, 49, Leicester-square, W.C.
TUESDAY, May 15th.—4.30 P.M., Specimens and Clinical Cases. (Lupus Erythematosus, &c.) 5.15 P.M., Dr. W. Knowsley Sibley: Lupus Erythematosus and its Treatment. Fellows' Monthly Dinner, Cavour Restaurant, Leicester-square, at 6.30 P.M.

LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

NORTH-EAST LONDON POST-GRADUATE COLLEGE, Prince of Wales's General Hospital, Tottenham, N.
Demonstration of Clinical Cases at 3.30 P.M.
MONDAY, May 14th.—Dr. J. Browning Alexander: Medical.
TUESDAY.—Mr. Howell Evans: Surgical. (3 P.M.)
WEDNESDAY.—Mr. Norman B. Fleming: Eye Cases.
THURSDAY.—Mr. H. W. Carson: Surgical.
FRIDAY.—Dr. C. E. Sundell: Diseases of Children.

LONDON HOSPITAL MEDICAL COLLEGE, Mile End, E.
TUESDAY, May 15th.—5.15 P.M., Dr. Millais Culpin: Dreams.
WEDNESDAY.—4.15 P.M., Dr. W. M. Feldman: Germinal Physiology.
FRIDAY.—5.15 P.M., Dr. Millais Culpin: Symptomatology.

WEST LONDON POST-GRADUATE COLLEGE, West London Hospital, Hammersmith-road, W.

MONDAY, May 14th.—12 noon, Mr. Simmonds: Applied Anatomy. 2 P.M., Mr. Addison: Surgical Wards. 3 P.M., Mr. Simson: Diseases of Women.

TUESDAY.—11 A.M., Dr. McDougal: Electrical Dept. 12 noon, Dr. Burrell: Chest Cases. 2.30 P.M., Mr. Tyrrell Gray: Surgical Wards.

WEDNESDAY.—10 A.M., Dr. Saunders: Medical Diseases of Children. 11 A.M., Mr. Simson: Gynæcological Demonstration. 2 P.M., Mr. Gibb: Eye Dept.

THURSDAY.—12 noon, Mr. Simmonds: Demonstration of Fractures. 2 P.M., Mr. MacDonald: Genito-Urinary Dept. 3 P.M., Dr. Scott Pinchin: Medical Out-patients.

FRIDAY.—10 A.M., Mr. Dudley Buxton: Dental Dept. 2 P.M., Mr. Banks-Davis: Diseases of Throat, Nose, and Ear. 3 P.M., Mr. Sinclair: Surgical Out-patients.

SATURDAY.—9.30 A.M., Dr. Burnford: Bacterial Therapy. 10 A.M., Dr. Saunders: Medical Diseases of Children. 10 A.M., Mr. Banks-Davis: Operations on Nose, Throat, and Ear.

Daily 10 A.M. to 6 P.M., Saturdays, 10 A.M. to 1 P.M., In-patients, Out-patients, Operations, Special Departments.

NATIONAL HOSPITAL FOR THE PARALYSED AND EPILEPTIC, Queen-square, Bloomsbury, W.C. 1.

POST-GRADUATE COURSE: MAY–JUNE, 1923.

CLINICAL LECTURES AND DEMONSTRATIONS.

MONDAY, May 14th.—2 P.M., Out-patient Clinic: Dr. Hinds Howell. 3.30 P.M., Aspect of Nervous Disease, Clinical and Pathological: Dr. James Taylor.

TUESDAY, May 15th.—2 P.M., Out-patient Clinic: Dr. Grainger Stewart. 3.30 P.M., Cerebral Tumours: Dr. Risien Russell.

THURSDAY, May 17th.—2 P.M., Out-patient Clinic: Dr. Kinnier Wilson. 3.30 P.M., Clinical Varieties of Paraplegia: Dr. Walshe.

FRIDAY, May 18th.—2 P.M., Out-patient Clinic: Dr. Gordon Holmes. 3.30 P.M., Treatment of Cerebral Tumour: Mr. Sargent.

COURSE OF LECTURES ON NEURO-PATHOLOGY.

MONDAY, May 14th.—12 noon, Cerebro-Spinal Fluid: Dr. J. Godwin Greenfield.

A COURSE OF 12 LECTURES on the ANATOMY AND PHYSIOLOGY OF THE NERVOUS SYSTEM will be given at 12 noon on TUESDAYS and FRIDAYS if there are sufficient entries for it.

Mr. Armour and Mr. Sargent operate at the Hospital on Tuesday and Friday mornings at 9 A.M., or at such other times as may be announced.

The fee for the whole Course is £12 12s., including Anatomy and Physiology, but these Lectures may be taken separately for a fee of £4 4s. The fee for the Course without Anatomy and Physiology Lectures is £10 10s. Special arrangements as to fees will be made for those unable to take the whole Course. Fees should be paid to the Secretary of the Hospital at the Office on entering for the Course.

C. M. HINDS HOWELL, Dean of Medical School.

NATIONAL HOSPITAL FOR DISEASES OF THE HEART, Westmoreland-street, Marylebone, W. 1.

THURSDAY, May 17th.—5.30 P.M., Dr. R. O. Moon: Heart Disease in Childhood.

INSTITUTE OF PATHOLOGY AND RESEARCH, St. Mary's Hospital, Paddington, W.

THURSDAY, May 17th.—4.30 P.M., Prof. F. G. Hopkins: An Oxidising Agent in Living Tissues.

LONDON SCHOOL OF MEDICINE FOR WOMEN, 8, Hunter-street, W.

TUESDAY, May 15th.—5 P.M., Prof. A. L. McIlroy: Toxæmias of Pregnancy.

HOSPITAL FOR SICK CHILDREN, Great Ormond-street, W.C.

THURSDAY, May 17th.—4 P.M., Dr. Nabarro: Syphilis in Infancy and Childhood.

INFANTS HOSPITAL, Vincent-square, S.W. 1.

MONDAY, May 14th.—6 P.M., Dr. Eric Pritchard: Physiology and Pathology of the Digestive System.

TUESDAY.—8.45 P.M., Dr. Eric Pritchard: Principles of Infant Feeding.

QUEEN CHARLOTTE'S LYING-IN HOSPITAL, Marylebone-road, N.W.

THURSDAY, May 17th.—5 P.M., Mr. J. B. Banister: Some Difficulties in the Puerperium.

MANCHESTER ROYAL INFIRMARY POST-GRADUATE LECTURES.

TUESDAY, May 15th.—4.15 P.M., Dr. A. H. Holmes: Massive Collapse of the Lung.

SALFORD ROYAL HOSPITAL.

THURSDAY, May 17th.—4.30 P.M., Dr. Bythell: The Bismuth Meal: with special reference to Gastroptosis.

UNIVERSITY OF BRISTOL POST-GRADUATE DEMONSTRATIONS (in the Medical Theatre).

THURSDAY, May 17th.—3.30 P.M., Mr. C. F. Walters: Modern Treatment of Stricture and Prostatic Cases.

Notes, Comments, and Abstracts.

SOME PROBLEMS IN THE LIGHTING OF PRINTING WORKS.

Abstract of a Paper read before the Illuminating Engineering Society on April 24th, 1923.

BY L. GASTER.

I MAY take as a starting-point a sentence in Mr. F. W. Goodenough's paper[1] read before this Society in 1912: "I doubt if there exists any industry in which good lighting has more effect on the successful running of the concern than is the case in the printing trade." The product of both journalists and printers is prepared exclusively for exhibition to *the eye*. An idea of the loss that may arise by inadequate lighting is afforded in a contribution by Mr. F. H. Bernhard to the *Electrical Review* (U.S.A.). In a large printing works it was found that after the conditions of illumination had been thoroughly modernised the general efficiency of work was improved by 25 per cent.[2]

Printers as a whole, and compositors especially, are probably above the average of workmen intellectually, working as they do continually with the eye and the brain as well as the hands. They are, therefore, more sensitive to working conditions and appreciative of their improvement. I understand that defects of eyesight are exceptionally frequent among compositors, which fact may be ascribed partly to work under inadequate lighting.

Value of a Well-Planned Scheme of Lighting.

In most sections of a works the aim should be to provide general illumination by lighting units of high candle-power, placed high up so as to be out of the range of view. A series of drop-lights terminating in lamps of small candle-power is inefficient, unsightly, and inconvenient. Nevertheless, the general lighting sometimes requires to be supplemented by a few local units, as many printing processes require lighting of this nature. In one respect the printing industry has an advantage over some other trades. Each machine has its allotted task and is invariably used for the same purpose. It is worth while, therefore, to scheme out suitable lighting, recognising that it should not require continual adjustment—as may happen in factories where the nature of the work and the duties required from machines change from time to time.

Although the procedure has recently been modified by the introduction of automatic type-setting machinery, the lighting of compositors' "frames" still forms an important problem. I have observed three main methods of lighting: (1) Unshaded or imperfectly shaded lamps placed over the centre line so as to illuminate the racks on either side; (2) lamps equipped with suitable reflectors used in the same way; and (3) general lighting from overhead lamps—e.g., semi-indirect lighting with sources situated between benches so that the light comes over the worker's shoulders. The first method cannot be recommended. The exposed filaments are troublesome to the eyes of the workers and the proportion of light reaching the frames is very small. But if the lamps are equipped with suitable reflectors and their distance above the top-line of the bench is suitably selected, it is possible by method (2) to obtain very good illumination on the actual inclined face of the bench. Some compositors still prefer local lighting of this description. It is, however, usually desirable to supplement this mode of lighting by general illumination from overhead sources: (*a*) In order to throw light on the drawers below the inclined face, which would otherwise be insufficiently illuminated; (*b*) to ensure adequate lighting of gangways between benches; and (*c*) to eliminate an undue contrast between the illuminated rack and the surroundings.

The alternative method of depending on overhead light is much more feasible with modern illuminants than with the low candle-power lamps of the past. It has the merit that the light comes from above and behind the worker and there is less likelihood of inconvenient reflection from the surface of the bench. In addition, the drawers receive a better illumination. Thus, in a recent installation of this kind it was found that the illumination on the racks was 6–8 foot-candles, and even drawers quite low down still received 1 foot-candle.

In the discussion before the Society in 1912 values in general ranging from 5–10 foot-candles (average) were recorded. In view of the fact that considerable variations in illumination at different points on a bench are often in evidence, it would seem that the average illumination, whether provided by general or local lighting, should lie within these limits. In good modern installations 5 foot-

[1] Illuminating Engineer, 1912, v., 171.
[2] Elec. Review, U.S.A., August 24th, 1918.

candles is doubtless usual. But there are still many works where much lower values would be recorded.

Local Lighting.

The lighting of linotype or monotype composing machines, where manuscripts are "tapped out," is usually effected by adjustable local lights placed about 18 inches above the keys and screened on the side facing the worker. This is a process that needs strong local lighting, as the operator has not only to see the keys, but to distinguish the more or less illegible handwriting of the contributions he is dealing with. Such sources need very careful shading. Average values recorded by Mr. J. Eck for linotype machines were up to 25 foot-candles on the matrix box, 4·3 on the keyboard, and 4 on the copy. A recent test in a printing works by the author gave 4–8 foot-candles on the keyboard, 4–8 on the "copy," and 4 on the setting drum (measured vertically)—the latter being a particularly important spot in view of the small letters and numbers on the drum that have to be distinguished. It would appear that the illumination of the manuscript, at any rate, should not be less than 4–5 foot-candles, in view of the small type or imperfect handwriting that the operator frequently has to decipher.

Diffused Light.

In machine rooms it is obviously desirable that the surroundings should be light in colour and the illumination very fully diffused, so that all interstices in complicated machinery are clearly revealed. I would suggest that, in the interests of safety, the illumination at floor-level should not be less than 0·5 foot-candles, irrespective of the illumination provided for the actual work. On laying-on and taking-off tables, where sheets are placed and inspected, a value of about 5 foot-candles is desirable, and this value is exceeded in some well-lighted works recently visited. The point may be raised whether, for the examination of first sheets, general diffused lighting is sufficient. The printer, in judging the impressions of type and blocks, is guided very largely by small indentations in the paper, and it is possible that these would be revealed more fully by oblique unidirectional lighting. It might, therefore, be a good practice to supplement the general lighting by a local adjustable fitting, the position of which with regard to the paper could be altered according to the needs of the operator. In this department the importance of good lighting can hardly be overestimated. Any fault in the running of machinery is much more difficult to detect and remedy if the lighting is insufficient. The author has met cases in which constant breakdowns and vexatious delays were occurring in a badly-lighted room, but practically ceased when modern and adequate illumination was installed.

Illumination of Machinery.

The proper illumination of the machinery, especially the huge rotary presses of the present day, is something of a problem. The conditions resemble somewhat those met with in textile factories. One may do everything possible by the placing and shading of the permanent general lights, and by the use of light surroundings, to promote good diffusion of light, but it is hardly possible by the aid of general illumination alone to ensure that all the requisite parts of such complex machinery will be well illuminated and clearly seen. This is a question that might well receive some attention from designers of such machinery, who should bear in mind the desirability of important parts being easily accessible and readily inspected. They might go further and embody in the design of the machine suitable facilities for the permanent mounting of supplementary protected lamps illuminating the vital parts where adjustments are made. In the absence of such facilities the attendant must rely on the use of portable lamps or special pendant lights at essential points. As a matter of principle no unprotected lamp should be inserted within the machine, as the trouble arising in the event of a lamp being broken would be considerable. The lamps must be so situated or used that a flood of light can be directed on the part inspected without the operator's eyes being dazzled by glare from an exposed mantle or filament, or inconvenient shadows being cast by his body. In rooms for packing and despatching the conditions of illumination are simple, and in lofty rooms semi-indirect lighting affording 2–3 foot-candles should answer requirements.

Differentiated Lighting for Various Processes.

In the following table are assembled figures showing the great variations met with in different works for identical processes, and also as an indication that the values indicated in the Home Office Report are such as can readily be complied with in practice. While practice in different works varies, it should be possible, by means of tests conducted in coöperation with those employed in the industry, to determine desirable minima based on scientific investigation. But it must, of course, be recognised that the mere provision of suitable numerical values of illumination *alone* is not sufficient to ensure adequate lighting; attention must be paid to such important factors as absence of glare, avoidance of inconvenient shadows, &c.

Process.	Illumination (foot-candles). Limits of values given by Mr. Eck and Mr. Goodenough.	Author's tests in 1923.	Home Office Third Report. Recommended minima.	Am. Illuminating Engineering Society (Industrial Practice)
Linotype and Monotype machines { On copy .. On keyboard ..	4–25 / 3–8	3–8	5	10–20
Type-setting in composing rooms :— On frames .. .. On imposition benches	5–14 / 2–10	6–8	5	10–20
Stereo foundry	0·5–4	—	3	5–10
Machine room :— On printing presses and examiners' tables	1–8	4–8	3	5–10
Editorial rooms	3–15	—	—	5–10
Proof-reading	3–10	5–10	3	5–10
Packing, folding, despatching, &c. ..	2·5–6	—	3	2–5

Block-Making.

Engraving processes are frequently mentioned as an instance of "fine work" requiring specially high illumination; here local adjustable lights seem desirable in addition to moderate general lighting. In etching and lithography operators seem to prefer a very highly diffused source, with an extensive luminous area, which is reflected in the more or less polished material in which they are working. Colour-printing, again, is a process requiring highly-specialised illumination, as one needs not only an exceptionally high illumination, but a quality of light enabling colours to be revealed in the same manner as by daylight. Developments in "artificial daylight" are of very great interest to colour printers, and in many cases the system has been used with benefit and has enabled work to be carried on successfully when daylight failed. The aim should be to concentrate the light at the place of inspection, which should be screened from the general uncorrected artificial illumination, and to obtain an illumination which approaches normal daylight not merely in colour but also in intensity.

Examination of "Copy."

It is singular that in some newspaper offices where the need of good lighting in the printing section has been fully recognised, the editorial department conducts its work in very meagre and inadequate light. The matter sent in to a newspaper is still largely written by hand, often in hurried and crabbed writing and on flimsy paper. Even matter presented in proof often does not compare favourably with the appearance of the type in the finished production. An editor's or sub-editor's room should contain suitable general lighting preferably of the semi-indirect type, supplemented by a well-shaded table lamp. Proof-readers, also, in general would prefer a special lamp over their work.

THE METROPOLITAN ASYLUMS BOARD AMBULANCE SERVICE.

IN THE LANCET of April 21st we referred to the questions recently raised in the press and elsewhere concerning ambulance arrangements in London, and to the need for more ambulances for the use of the three authorities—the London County Council, the Metropolitan Asylums Board, and the St. John Ambulance Association—which direct ambulance services in the London area. In view of the public interest roused, the Ambulance Committee of the Board submitted a report which was adopted on May 5th, with a recommendation that a copy be forwarded to the Ministry of Health. The Board have six ambulance stations situated in different parts of London, and a large repair depôt at Fulham. They have at these stations 107 motor ambulances and omnibuses, apart from a number of motor goods lorries and tractors. The primary function of the Board's ambulance service is the removal of cases of infectious disease in the Metropolis. The Board also remove a considerable proportion of the patients in their other institutions for tuberculosis, sick and convalescent children, and mental deficients. They undertake, with their motor transport service, a substantial portion of the transport of goods from their central stores for their institutions.

History of the Metropolitan Ambulance Service.

In 1906 a departmental committee of three members was set up by the Home Secretary to inquire as to the provision of and possible improvement in ambulance service for "cases of accident and sudden illness occurring in streets and public places within the Metropolis." This committee heard a great deal of evidence and reported in December, 1906. Two of the members reported in favour of an extension of the non-infectious service of rapid ambulances initiated by the Metropolitan Asylums Board, working in close coöperation with the Metropolitan Police. The third member was of opinion that the London County Council should be the authority for the street accidents ambulance service. A good deal of emphasis was laid at that time upon the desirability of keeping the infectious ambulance service and the street accident service distinct. In 1909 the Metropolitan Ambulances Act was passed, empowering the London County Council to establish and maintain, or to contribute towards the cost of or otherwise to aid in establishing or maintaining, an ambulance service for dealing with cases of accidents or illness (other than infectious diseases) within the County of London. In November, 1913, the County Council invited the Board to prepare a scheme of coöperation with them and other metropolitan authorities for the establishment of a street accident ambulance service, and in the same month the Board prepared and submitted a complete scheme for dealing with this matter. It was, however, not accepted, and the Council proceeded themselves, in 1915, to set up the existing street ambulance service. Meantime, the Board's ambulance service had, apart from its normal work, been largely utilised for the removal of non-infectious cases from private houses to hospitals, and it has continued to meet this need.

The following statistics show the extent of the removal of patients carried out by the Board in recent years, viz. :—

	Year ending Dec. 31st.		
To the institutions of the Board—	1920.	1921.	1922.
(*a*) Infectious	36,594	48,547	33,679
(*b*) Non-infectious	3,859	4,361	4,807
Other removals—			
From home to hospital, infirmary, or elsewhere, or on return journeys.	18,827	13,610	13,281
Total	59,280	66,518	51,767

Present Positions of the L.C.C. and M.A.B. Services.

In the case of removals of private persons from their houses to hospitals or other addresses, the Board charge a fee for the use of the ambulance. For removals within the administrative County of London the fee is a fixed one of 10s. per journey, with an additional charge when a nurse is supplied. Outside the County of London a mileage rate is fixed; the removal of sick patients has been satisfactorily undertaken to distances up to 200 miles from London. In this matter of charging for ambulance service, the Board's service differs from the street ambulance service of the County Council, which is free, but the Board's charge is low, and in the great majority of cases has been paid without demur. No urgent case has been refused through failure to produce the amount charged at the time of removal, and in cases of poverty or distress applications relating to the charge have received favourable consideration.

The present position is, therefore, that the London County Council have provided a free ambulance service to deal with street accident cases, while the Board have a service which deals with infectious and other hospital removals, and is thoroughly adequate to deal with all demands for removals of all kinds, other than street accidents—e.g., from private houses or dwellings in London. It is, of course, impossible to guarantee in a town the size of London that there would never be the slightest delay of any kind in removing a patient. The County Council have recently published a record of their work, and in regard to that of the Board, also, complaints of delay have been almost negligible, having regard to the great and fluctuating demands it meets. The Board never refuse an urgent call either within the County of London or from over the border, but they do not encroach upon the street accident service, nor is there any occasion for the latter, as a rule, to enter the field covered by the Board's service. The Board have always been ready to work in cordial coöperation with the Council and any other authority maintaining or requiring ambulance services. The vast majority of house removals are effected on medical advice, and steps are being taken to acquaint every medical practitioner in London of the method by which the Board's ambulances, with or without nurses, may be promptly obtained at any hour of the day or night. The Commissioner of the Police has been informed that the Board's ambulances are available for police calls at any time for removal from houses in London and that the question of payment will be dealt with after the removal.

THE WORK OF THE FRIENDS' RELIEF COMMITTEE.

THE ninth report of the Emergency and War Victims' Relief Committee of the Society of Friends covers the year from April 1st, 1922, to March 31st, 1923. The well-known work of relief, which began in France, will have its permanent memorial in that country in the shape of the maternity home opened at Châlons-sur-Marne in June, 1922. This maternity home is the successor of the emergency maternity hospital opened by the committee in December, 1914; the number of births during the year was 220. A department for children under two years, and ante-natal and nursing care, further the maternity and child-welfare work of the hospital.

Russia.

The work of famine relief in the Buzuluk area of Russia—an area roughly the size of Yorkshire and Lancashire, formerly having a population nearing half a million, of whom one in three died during the famine—will, it is hoped, be terminated after the next harvest. Since last summer, when typhus and other epidemics had spread widely, and cholera was feared, health conditions have greatly improved, although malaria has been prevalent. Dr. M. D. Mackenzie, medical officer of the Friends' Mission, has organised the medical side of the work; an epidemic hospital at Buzuluk was reopened, and entire responsibility for six months' upkeep assumed by the mission. Ten other hospitals have received equipment and food enabling them again to be opened; 80 institutions have received instruments, drugs, and vaccines, and cholera vaccine sufficient for 100,000 persons was distributed to local medical men. A sanitary guard was established at Buzuluk station to watch for typhus, and a communal laundry was repaired and set in order in the town. A bacteriological laboratory has also been set up for blood-testing purposes. In all this work Russian doctors take an active part; complete arrangements have been made for handing the organisation over to them when the mission leaves the country.

Austria and Poland.

From Austria and Poland, also, the committee hopes to withdraw its workers during the summer. Here the chief medical interest of their activities has recently lain in preservation of the standard of tuberculosis dispensary work and child welfare organisation. The supply of cheap meals to university staffs and students has now been discontinued in Poland; that in Austria continues, and has been several times referred to with great appreciation by our medical correspondent in Vienna.

The committee is now appealing for funds to complete its great work. During the period under review the London expenditure was over £300,000, of which the English administration expenses amount to 3·79 per cent. Donations should be sent to the Friends' Relief Committee, 10 and 11, Fetter-lane, London, E.C. 4.

METRIC EQUIVALENTS.

WE have received from Mr. A. E. Bawtree, F.R.P.S., a card containing scales for finding metric equivalents and mensuration results without calculation. Sixteen scales are printed on the inside of a card, which, when folded, measures 5 in. by 4 in. Each scale has the English quantitative divisions on one side of a line, and the metric divisions on the other, so that readings can be instantly taken either way. Into their metric equivalents Nos. 1, 2, and 3 convert miles, yards, and inches; Nos. 4, 5, 6, and 7 convert square yards, square inches, cubic yards, and cubic inches; No. 8 deals with pressure in pounds per square foot; Nos. 9, 10, 11, and 12 deal with tons, pounds, grains, and fluid ounces and also indicate gallons. Nos. 13, 14, and 15 compare Fahrenheit and Centigrade thermometer scales over a range from absolute zero to 2000° C.; No. 16 gives the circumference of a circle when the radius is known, and from this information with regard to spheres, cylinders, and cones is readily found. Students and teachers in many branches of learning, business men, and all whose work or hobby brings them into contact with these calculations will find the cards useful. They can be obtained, price 1s. each, post free, from Mr. Bawtree, 7, Manor Park-road, Sutton, Surrey.

Humagsolan Tablets.—These tablets (see THE LANCET, March 31st, p. 658) are coated with the usual silver deposit as an extra protection to the ingredients.

Hospital Saving Association.—The address of the Association is now 77, Cambridge-terrace, London, W. 2 (telephone: Paddington 1653). Mr. F. B. Elliot is the general secretary.